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Partners for Health Reformplus

Toolkits for Strengthening Primary Health Care

January 2005

Prepared by:

PHRplus/Albania

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Abt Associates Inc.
4800 Montgomery Lane, Suite 600 ■ Bethesda, Maryland 20814
Tel: 301/913-0500 ■ Fax: 301/652-3916

In collaboration with:

Development Associates, Inc. ■ Emory University Rollins School of Public Health ■ Philoxenia International Travel, Inc. ■ Program for Appropriate Technology in Health ■ Social Sectors Development Strategies, Inc. ■ Training Resource Group ■ Tulane University School of Public Health and Tropical Medicine ■ University Research Co., LLC.

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Mission

Partners for Health Reformplus is USAID's flagship project for health policy and health system strengthening in developing and transitional countries. The five-year project (2000-2005) builds on the predecessor Partnerships for Health Reform Project, continuing PHR's focus on health policy, financing, and organization, with new emphasis on community participation, infectious disease surveillance, and information systems that support the management and delivery of appropriate health services. PHRplus will focus on the following results:

- ▲ *Implementation of appropriate health system reform.*
- ▲ *Generation of new financing for health care, as well as more effective use of existing funds.*
- ▲ *Design and implementation of health information systems for disease surveillance.*
- ▲ *Delivery of quality services by health workers.*
- ▲ *Availability and appropriate use of health commodities.*

January 2005

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and: Karen Cavanaugh, CTO
Health Systems Division
Office of Health, Infectious Disease and Nutrition
Center for Population, Health and Nutrition
Bureau for Global Programs, Field Support and Research
United States Agency for International Development

Abstract

In Albania, the PHR*plus* Project developed and tested a series of tools designed to introduce family medicine concepts and strengthen primary health care (PHC) services. Toolkits were developed and tested in four pilot PHC centers in one region, and are now ready to be used in additional PHC settings in Albania or adapted for use elsewhere. PHC facility managers will find the toolkits useful reference materials when developing strategies and tools to improve quality of care and monitor and evaluate PHC strengthening efforts.

This series comprises three toolkits: (1) PHC Service Delivery Toolkit; (2) PHC Quality Improvement (QI) Toolkit; and (3) PHC Health Information Systems (HIS) Toolkit. Each Toolkit and accompanying forms are [hyper-linked](#) on the table of contents to facilitate navigation through the document.

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Acronyms

CPG	clinical practice guideline
CQI	continuous quality improvement
DAN	data access nodes
GP	general practitioner
HII	Health Insurance Institute
HIS	health information system
HIV	human immunodeficiency virus
ISI	information system infrastructure
LAN	local area network
MCQ	multiple-choice questionnaire
MOH	Ministry of Health
NGO	non-governmental organization
PHC	primary health care
PHR_{plus}	Partners for Health Reform _{plus} Project
QA	quality assurance
QI	quality improvement
TB	tuberculosis
USAID	United States Agency for International Development

Acknowledgments

This series of toolkits to improve PHC services was developed by the PHR*plus* Project with funding from USAID/Albania. Local stakeholders were involved in the development and testing of these tools in pilot facilities in the Berat region of Albania. PHR*plus* worked closely with British general practitioners affiliated with the NGO PRIME (Partnership in International Medical Education), as well as with family medicine faculty from Tirana Medical School, and PHR*plus* Consultant Dr. Maksim Jani to develop the Service Delivery and Quality Improvement toolkits. Health Information Systems tools were adapted from USAID-funded Partnerships for Health Reform (PHR) Project tools developed in Egypt and periodically revised in close collaboration with regional stakeholders. The PHR*plus* Project gratefully acknowledges the input and review of these tools from our counterparts, as well as the helpful input received from the USAID Mission in Tirana as they were designed, tested, and refined.

Executive Summary

Purpose of the Toolkits

In Albania, the PHR*plus* Project developed and tested a series of tools designed to introduce family medicine concepts and strengthen primary health care (PHC) services. Toolkits were developed and tested in four pilot PHC centers in one region, and are now ready to be used in additional PHC settings in Albania or adapted for use elsewhere. PHC facility managers and projects supporting the strengthening of PHC services will find the toolkits useful reference materials as they develop their own strategies and tools to improve quality of care and monitor and evaluate PHC strengthening efforts.

Description of the Toolkits

This series comprises three toolkits: (1) PHC Service Delivery Toolkit; (2) PHC Quality Improvement (QI) Toolkit; and (3) PHC Health Information Systems (HIS) Toolkit. The series was designed to provide a comprehensive set of reference materials to help PHC providers, family medicine trainers, and health care managers and supervisors strengthen PHC service delivery. While each tool or toolkit can be used separately, PHR*plus* experience in Albania has demonstrated that activities aimed at strengthening PHC are strongly inter-connected and may need to be implemented in a comprehensive and coordinated fashion. Implementation often requires shifts in cultural paradigms for providers, so results may be best achieved by implementing processes in a step-by-step manner, with one tool (e.g. clinical practice guidelines) leading to development of another (training curricula on content and use of guidelines). PHR*plus* experience in Albania demonstrated that improvements in quality of care were possible despite lack of monetary incentives for the participating medical staff. However, central and regional health authorities should be encouraged to more actively monitor quality of care and implement management and finance reforms that provide incentives for providers to continuously improve quality so initial provider enthusiasm is not lost.

The first toolkit in this series is aimed at developing an appropriate list of PHC services for Albania, developing clinical guidelines and standards for PHC providers for these services, and equipping providers with the knowledge and skills necessary to implement the guidelines and improve quality of care. PHR*plus* worked closely with British general practitioners affiliated with the NGO PRIME, family medicine faculty from Tirana Medical School, and nursing faculty from Vlore University to develop this toolkit. This toolkit ensures that pilot PHC facilities have the necessary inputs to improve quality – a defined scope of services, minimum standards of care and straightforward clinical practice guidelines, and necessary refresher training for PHC providers.

Sample List of PHC Services	A sample list of services to be provided by a PHC facility in Albania
Sample PHC Physician Retraining Curriculum	A description of the content and format of PHC physician retraining
Sample PHC Nurse Retraining Curriculum	A description of the content and format of PHC nurse retraining
Quick References	One-page quick reference sheets based on Albanian clinical practice guidelines on common conditions for use by PHC providers (clinical practice guidelines are available only in Albanian)
Referral Guidelines	Summary guidelines for common conditions describing when to refer to specialists or hospital for use by PHC providers
Referral Policy and Procedure	Policy and procedure developed to govern the referral process from PHC providers to specialists or hospitals (agreed on by PHC providers and specialists)

The PHRplus Project also provided technical assistance to PHC managers and practitioners to develop and implement facility-based quality improvement systems and regional-level quality assurance processes. A second toolkit in the series helps to establish sustainable processes at PHC facilities that are needed to improve quality – quality committees, routine measurement of quality improvement using chart audit, patient satisfaction surveys, and monthly reports and meetings to review findings. The PHC QI system resulted in patients noticing differences in quality of care and providers feeling more empowered to create systems to improve quality themselves.

Terms of Reference – PHC QI Committee	Terms of reference for a facility-level QI committee including purpose, objectives, members, and meeting schedule
Terms of Reference – Regional/Central QI Board	Terms of reference for regional or central QI committee including purpose, objectives, members, and meeting schedule
Sample QI Report	A monthly report from a PHC facility providing a summary assessment of quality based on information from medical chart audits, patient satisfaction surveys, and the PHC health information system, as well as recommendations on improving quality
Medical Charts	Sample sections for revised PHC medical charts, including patient registration information, basic medical information, patient history, and a visit note
Chart Audit Forms	Sample forms to guide routine audit of medical charts, including a form to assess basic charting technique, as well as forms for asthma, diabetes, hypertension, acute respiratory infection, and tonsillitis
Patient Satisfaction Survey	A sample patient satisfaction survey for PHC patients and clients

The PHC HIS is a simple Access database with user-friendly interfaces. The system is based on an encounter form completed by a primary care provider for each patient visit and produces easy-to-read monthly reports. The encounter form collects information on patient characteristics, provider, visit characteristics, diagnosis, and disposition (referrals, prescriptions, lab tests). The system has been designed to be easy to use with simple encounter forms, user-friendly data entry, unsophisticated data transfer and consolidation, and simplified routine reporting. The result is a simple, well-designed PHC HIS that is rapidly being expanded in Albania and may have applications in other country settings.

Introduction to the Albania PHC HIS	A short introduction to the development history and structure of the PHC HIS in Albania
System Orientation	A “walk-through” of the system to demonstrate its functions and uses using sample data and screen shots
Description of PHC HIS Infrastructure	A short description of the “nuts and bolts” of the system, with explanations of the technical specifications, system hierarchy, data entry, data transfer, data security, reporting, and system administration
Sample Calculation of System Requirements	Rough calculations based on population that may allow health authorities and managers to project potential costs of implementing the PHC HIS in their region
Encounter Form and List of Procedure Codes	The form used by PHC providers to record each patient encounter for entry into the system
Procedures for Completing the Encounter Form	A simple explanation for PHC providers to guide them through completing the encounter form, including reference material on coding
Procedure for Data Entry	A simple explanation for data entry personnel on creating “batches” of entries, entering encounter form data in batches into the system using a numeric keypad, and double entry procedures to ensure accuracy
Sample Reports	A routine set of monthly reports that can be automatically generated by the system

1. Introduction

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In Albania, the PHR*plus* Project developed and tested a series of tools designed to introduce family medicine concepts and strengthen primary health care (PHC) services. Toolkits were developed and tested in four pilot PHC centers in one region, and are now ready to be used in additional PHC settings in Albania or adapted for use elsewhere. PHC facility managers and projects supporting the strengthening of PHC services will find the toolkits useful reference materials as they develop their own strategies and tools to improve quality of care and monitor and evaluate PHC strengthening efforts.

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2. PHC Service Delivery Toolkit

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Sample List of PHC Services

Clinical Services

Adult Care

Basic Diagnosis and Treatment of Illnesses and Diseases

This category covers the most common illnesses and diseases of adults accessing services at the primary health care (PHC) level. Clinical Practice Guidelines (CPGs) (and accompanying Quick Reference Tools) have been developed for the disease categories listed below. They were chosen because of the relative frequency with which they are seen at the PHC level.

- ▲ Hypertension
- ▲ Chest pain
- ▲ Angina/Ischemic heart disease
- ▲ Heart failure
- ▲ Diabetes
- ▲ Urinary tract infections
- ▲ Anemia
- ▲ Asthma/COPD
- ▲ Acute low back pain
- ▲ Depression
- ▲ Fatigue
- ▲ Adult respiratory infection

Pediatric Care

Basic Diagnosis and Treatment of Illnesses and Diseases

This category covers the most common illnesses and diseases of adults accessing services at the primary health care level. Clinical Practice Guidelines (and accompanying Quick Reference Tools) have been developed for the disease categories listed below. They were chosen because of the relative frequency with which they are seen at the PHC level.

- ▲ Acute tonsillitis
- ▲ Bronchiolitis
- ▲ Lower respiratory tract infections
- ▲ Otitis media
- ▲ Diarrhea
- ▲ Febrile convulsions
- ▲ Temperature management

Well Child Care

A clinical practice guideline and quick reference has been developed for:

- ▲ Childhood Growth and Development Monitoring

Women's Health and Reproductive Health Care

For women's health and reproductive health, PHR*plus* has developed CPGs for:

- ▲ Antenatal Care
- ▲ Labor & Intrapartum
- ▲ Postnatal Care
- ▲ Clinical diagnosis and treatment of common problems during pregnancy and delivery
- ▲ Normal pregnancy
- ▲ Normal delivery (only applies to the Lapardha Center)
- ▲ Family planning

Trainings in female anatomy, sexually transmitted diseases, family planning, prevention screenings (breast exams, Pap Smears), were done for midwives at the pilot centers in conjunction with the Community Campaign. Additionally, training was done in cooperation with the JSI SEATS program in the areas of family planning, sexually transmitted diseases, and breast feed and prenatal care. Midwives work with protocols developed by JSI.

Emergency Care

As part of the Continuing Medical Education program PHR*plus* provided comprehensive materials and training in:

- ▲ Initial management and stabilization of emergency problems

Mini-Laboratory Services

The minimal services available at the PHC level include:

- ▲ Urine dipstick
- ▲ Whole blood glucose testing

Sample PHC Physician Retraining Curriculum

Introduction

Postgraduate training in Family Medicine has only recently been introduced into Albania and the vast majority of Doctors working in Primary Care had no specific training in this specialty. Opportunities for the continuing education for GP's have been extremely limited. Much work needs to be done in this area and this program has been designed as the pilot study of the first phase of a retraining schedule suitable for use across the country.

Aims of the Program

The goal is to improve the quality of care by improving the services already in existence and introducing new ones.

The ultimate aim is to impart the necessary knowledge, skills, attitudes and professional values to practice appropriate medicine within the community in accordance with the 'Service Development Module' document (attached) using the suggested clinical practice guidelines (CPGs).

The course will provide a firm platform from which to further develop the practice of Family Medicine and the habit of Life Long Learning.

Principles

This curriculum is devised to comply with modern education theory, – the principals of which are, -

1. To establish an effective learning climate, where learners feel safe and comfortable expressing themselves.
2. To involve learners in mutual planning of relevant methods and curricular content.
3. To involve learners in diagnosing their own needs – this will help to trigger internal motivation.
4. To encourage learners to formulate their own learning objectives, – this gives them more control of their learning.
5. To encourage learners to identify resources and devise strategies for using the resources to achieve their objectives.
6. To support learners in carrying out their learning plans.
7. To involve learners in evaluating their own learning, – this can develop their skills of critical reflection.

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Structure and Curriculum of Training Programme

The program consists of 150 hours training in Berat and four full weeks in Tirana in a university attachment.

Each six hour training day in Berat was divided into three two hour sessions, 9-11, 11.30-1.30 and 2.30-4.30 with a coffee break and a simple lunch provided. Some of these sessions were concerned with the principles and practice of Primary Care and others were programmed and structured around the presentation of a CPG and the discussion of this by the participants and, where appropriate, by local specialists or other PHCT members. The goal was to be responsive to the participants' requirements and suggestions.

Typically this consisted of:

- ▲ an introductory lecture and presentation of the subject (one hour)
- ▲ workshop and practice work – group work, role playing, working with models, working with patients etc, – (two hours).
- ▲ Questions, discussions and summary of the day and evaluation of the session, (one hour).

Subjects for CPGs were selected by a process of consultation, taking into account local and national priorities. They were prepared by taking into account experience in other countries and local human and material resources. These are being modified as a result of the experience gained within the pilot study.

A member of the training consultancy team was responsible for each session. At least one week prior to the presentation, each presenter submitted a detailed plan of the program (see attached proforma) and necessary written materials to enable other participants to be invited and the main participants to prepare themselves for the session.

The program was aimed to give maximum potential for the availability of local resources. Local specialists and appropriate members of the Primary Health Care Team were encouraged to attend certain parts of the program.

During the shorter, unstructured part of the day, participants brought up actual clinical cases and problems. Role play was used during the training, and during the course of the program, each participant made at least one short presentation of a relevant and problem orientated subject, selected by mutual agreement. Opportunity was taken in this time for a review of practical skills or any matters arising from the previous week's course. The session also included a written evaluation by participants at its conclusion.

At least one week before each training day, participants were given any necessary paper work to prepare themselves for the session. They also received any necessary upgrades to previous modules.

Participants also sought out learning experiences in their everyday work, and brought cases to the group for presentation or discussion.

Some one-to-one observation of participants in their consultations was carried out in order to help them identify areas to be strengthened.

Participants were given a log-diary in which to record attendance at the course, topics covered and skills acquired. A section of the log provided space to record learning needs encountered and measures taken to fill that need.

The training in Tirana consisted of two groups of eight, one for four weeks in June and one for four weeks in September. It was based on a rotation system with two subgroups of four doctors each. The structure of this period was as follows, –

- ▲ Two weeks in Internal Medicine, one week each in Paediatrics and Obstetrics & Gynaecology.
- ▲ Four tutorial sessions per week, two hours each, Monday to Thursday, 12.0-2.0.
- ▲ Two lectures per week, one hour each for two groups together (eight doctors) on Fridays, 9.0-10.0 and 10.15-11.15.
- ▲ One workshop per week, (all doctors together) on Fridays with a summary of the week, 11.30-1.00.
- ▲ One Round Table per week (medicine and society) two groups together, eight doctors, 1.15-2.45.

Assessment of programme

There are three key components to the retraining: knowledge, skills and attitudes.

- ▲ Increase in knowledge will be assessed both informally during the training period and in a more quantitative manner by the use of multiple choice questionnaires (MCQs). An anonymised but numbered MCQ will be undertaken by all participants during the first four weeks. This will be provided by experts from the Department of Family Medicine in Tirana (with help from UK associates if necessary). The MCQ will be repeated at the end of the course and both overall and individual progress of participants will be assessed.
- ▲ Skills improvement will be assessed during the one-to-one observation period and during hospital attachments as well as during the unstructured part of the Friday sessions.
- ▲ Attitudes will be assessed in the same way with additional material coming from the comments on the weeks assessment sheets and on final course assessment by participants.

Future development/ongoing training

This curriculum covers those conditions identified in the initial consultation by *PHRplus* although there are certain major areas and important topics in primary care which are not specifically covered. Whilst some of these may be dealt with during the two hour, chiefly unstructured sessions and in the Tirana attachment, it is recommended that an ongoing program of continuing medical education is needed subsequent to the course. This could take the form of a one day per month programme in Berat and/or attachments at Tirana University Hospital.

The following subjects should be included in this.

- ▲ HIV
- ▲ TB
- ▲ Dermatology, including skin cancer

- ▲ Ophthalmology, especially the management of red eye.
- ▲ Dementia
- ▲ Cerebro-vascular accidents
- ▲ Nutrition and the treatment and prevention of obesity
- ▲ Thyroid disease
- ▲ Hepatitis
- ▲ Joint problems, arthritis
- ▲ Terminal care
- ▲ Menopause
- ▲ Minor surgery lacerations, minor trauma and management of soft tissue infections
- ▲ Headache, facial pain
- ▲ Drug abuse, smoking and alcohol

Proforma for Preparatory Material

Aim(s)

Objective(s)

Synopsis of lecture/presentation

Suggested preparation

Eg. Reading material if available, selected case studies, review of health centre statistics etc.

Material to be precirculated

Eg. CPG, Case studies

List of material to be brought to the Presentation

Training in Berat

	Topic for the Session	Other Participants and Contributors	Number of Doctors
Session 1 Jan 28	Change management and the overview of family medicine including the interfacing of primary and secondary care, Part One	All GPs, heads of departments and specialists	29
Session 2 Jan 29	Change management and the overview of family medicine including the interfacing of primary and secondary care, Part Two	All GPs, heads of departments and specialists	29
Session 3 Feb 21	Family medicine: the definition and philosophy, core competences as per the new European definition. Introduction to clinical practice guidelines and the training course	Course participants and specialists	18
Session 4 Feb 28	Primary care: the diagnostic process and the principles of the management of the patient in	Course participants	17
Session 5 March 7	Anticipatory care: primary, secondary and tertiary prevention, health promotion	Course participants and members of the primary health care (PHC) team	17
Session 6 March 14	Chest pain: the diagnostic process and principles of the management as described in models in Session 4	Course participants, cardiologists and other interested specialists	18
Session 7 March 21	Family planning and sexual health	Course participants, midwives and nurses	17
Session 8 March 28	Communication skills in primary care	All GPs, heads of departments and specialists	17
Session 9 March 28	Clinical skills in primary care	All GPs, heads of departments and specialists	18
Session 10 May 23	Growth development and monitoring of the children, how to do it, the factors that influence normal growth and development, how to involve the parents, the family and the community	Course participants and nurses	16
Session 11 April 11	Respiratory infections in children and adults the diagnostic process and management using the model of the Session 4, prevention as described in Session 5	Course participants, Paediatricians and Pulmonologists	17
Session 12 April 18	Low back pain: what does it mean for the patient. How it affects his everyday activity, using the holistic model of Session 4, prevention as described in Session 5	Course participants, Neurologists and Rheumatologists. Physiotherapists	14
Session 13 April 25	Fever during infancy and childhood: the diagnostic process and management using the model of Session 4, prevention as described in Session 5. Febrile seizures and their management	Course participants and Paediatricians and nurses	17
Session 14 May 16	Obstetric care in general practice, Part One: hygiene during pregnancy, nutrition during pregnancy, involvement of women, the family and the community	Course participants, midwives and Obstetricians	14
Session 15 May 16	Obstetric care in general practice, Part Two: Haemorrhages of the first and third semester, management of the pregnant woman considering all the elements as described in Session 4. Postpartum care, normal puerperium care, puerperal sepsis, postpartum hemorrhages	Course participants Obstetricians and midwives	13
Session 16 April 25	Diarrhea: the diagnostic process and management using the model of the Session 4, prevention as described in Session 5. Rectal bleeding	Course participants. Paediatricians, Gastroenterologists and other interested specialists	12

	Topic for the Session	Other Participants and Contributors	Number of Doctors
Session 18 May 29	Principles of chronic disease management, including screening and patient education for improved health in the community, Part One	All GPs, heads of departments and specialists and suitable members of the PHC team	16
Session 19 May 30	Principles of chronic disease management, including screening and patient education for improved health in the community, Part Two. Including Audit	All GPs, heads of departments and specialists and suitable members of the PHC team	16
Session 20 June 6	Diabetes: the diagnostic process and management using the principles of Sessions 18, 19, the model of the Session 4, prevention as described in Session 5	Course participants, Endocrinologists and suitable members of the PHC team	17
Session 21 June 20	Asthma: the diagnostic process and management using the principles of Sessions 18, 19, the model of Session 4, prevention as described at Session 5	Course participants, Allergologists Pneumologists and suitable members of the PHC team	14
Session 22 June 6	Hypertension: the diagnostic process and management using the principles of Sessions 18, 19, the model of Session 4, prevention as described in Session 5	Course participants, Cardiologists, Nephrologists and suitable members of the PHC team	16
Session 23 June 13	Abdominal pain: including epigastric pain and dyspepsia	Course participants, surgeons and Gastroenterologists	16
<i>July and Sept</i>	<i>Rotational training in Tirana and one-to-one teaching in PHC centres</i>	<i>Separate Programme</i>	
Session 24 Sept 26	Integration of the principles of family medicine to include mental health and the promotion of well being for the patient and the community. Part One.	All GPs, heads of departments and specialists	16
Session 25 Sept 27	Integration of the principles of family medicine to include mental health and the promotion of well being for the patient and the community. Part Two.	All GPs, heads of departments and specialists	16

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Training in Tirana

Obstetrics & gynecology

Antenatal care	tutorial
Normal vaginal delivery	tutorial
The dystocias	tutorial
Vaginal examination, Insertion of Speculum, taking an HVS and a cervical smear.	tutorial
Abnormal vaginal bleeding	lecture
Cervical cancer	lecture

Pediatrics

Pediatric examination..	tutorial
Acute respiratory infections in children. Observation of Vital signs.	tutorial
ENT examination, Otitis media, use of the otoscope,	tutorial
According to the participants wish	tutorial
Management of ARI	lecture
Management of diarrhoea Use of Oral Rehydration	lecture

Internal medicine

Anemia	tutorial
Ischemic heart disease	tutorial
Heart failure	tutorial
Urinary tract infections	tutorial
Geriatrics	tutorial
Geriatrics	tutorial
According to the participants wish	tutorial
According to the participants wish	tutorial
Anemic disorders	lecture
Emergency situations.	lecture
According to the participants wish	lecture
According to the participants wish	lecture

Round tables

Invited speakers from the Health Insurance Institute
Invited speakers from the Ministry of Health
Invited speakers from the Chamber of Doctors
According to the participants wish

Sample PHC Nurse Retraining Curriculum

Date	Sessions topics
Session 1 23 May	Effects of the environment on community health. The role of the nurse in protection of community health
Session 2 30 May	Management of patients with respiratory problems
Session 3 6 June	Child monitoring and development. Teenagers
Session 4 13 June	Water and health in community. Monitoring contamination, transmission of water-borne illness. Health staff responsibilities for the security of clean water
Session 5 20 June	Vital signs. Injections Referral protocols.
Session 6 27 June	Cardiovascular problems. Cardiovascular specialists and hematologists
Session 7 4 July	Water-borne diseases (hepatitis, abdominal typhus, cholera, dysentery)
Session 8 11 July	Metabolic and endocrinological problems
Session 9 18 July	The law for the organization of public health services Health organizations and institutions in the Republic of Albania, their public health duties
Session 10 25 July	Digestive and gastrointestinal problems
Session 11 1 August	Emergency management. Anaphylactic shock. Cardiopulmonary intensive care. Wound care Cardio-pulmonary intensive care
Session 12 5 September	Sexual transmitted diseases (hepatitis and SIDA)
Session 13 12 September	Renal and urinary tract problems
Session 14 19 September	Stress and pain management
Session 15 26 September	Dealing with dying patients, patients with cancer

Date	Sessions topics
Session 16 3 October	Airborne diseases and infection from streptococcus (Meningitis, encephalitis, etc)
Session 17 10 October	Nursing care of adults and elders
Session 18 17 October	Immunology problems (immunity system, immune-pathology and immune- deficiency, allergic problems and rheumatology)
Session 19 24 October	Zoonotic diseases (brucellosis, anthrax)
Session 20 31 October	Principles and requests in patient management. Rehabilitation principles and practices. Health Center Management Nurse communication skills
Session 21 5 November	Neuro-sensorial problems (eye and ear disorders, neurologic disorders), patient management

Quick References

CLINICAL PRACTICE GUIDELINES FOR FAMILY DOCTORS

Quick References



CONTENTS AND AUTHORS

HEALTH CARE FOR ADULTS

Hypertension.....	
Chest Pain.....	
Angina.....	
Heart Failure.....	
Diabetes Mellitus.....	
Asthma and COPD.....	
Acute Low Back Pain	
Anemia.....	
Acute respiratory Tract Infections in Adults.....	
Urinary Tract Infections.....	
Fatigue.....	
Depression.....	

HEALTH CARE FOR CHILDREN

Temperature Management.....	
Febrile convulsions.....	
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Bronchiolitis.....	
Lower Respiratory Tract Infections.....	
Growth and Development.....	

OB-GYN HEALTH CARE

Normal Antenatal Care	
Normal Puerperal Care.....	
Management of Complications	

AUTHORS

Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye

Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye
Dr.Geoff Pye

Dr. Maksim Jani
Dr. Maksim Jani
Dr. Maksim Jani

HYPERTENSION

RISK FACTORS:

1. DIABETES
2. RAISED LIPIDS
3. SMOKING
4. AGE > 60 YEARS
5. FAMILY HISTORY OF CARDIOVASCULAR DISEASE
MEN < 55, WOMEN < 60
6. SEX: MEN AND POSTMENOPAUSAL WOMEN

LIFESTYLE MODIFICATIONS: (AS EFFECTIVE AS MONOTHERAPY)

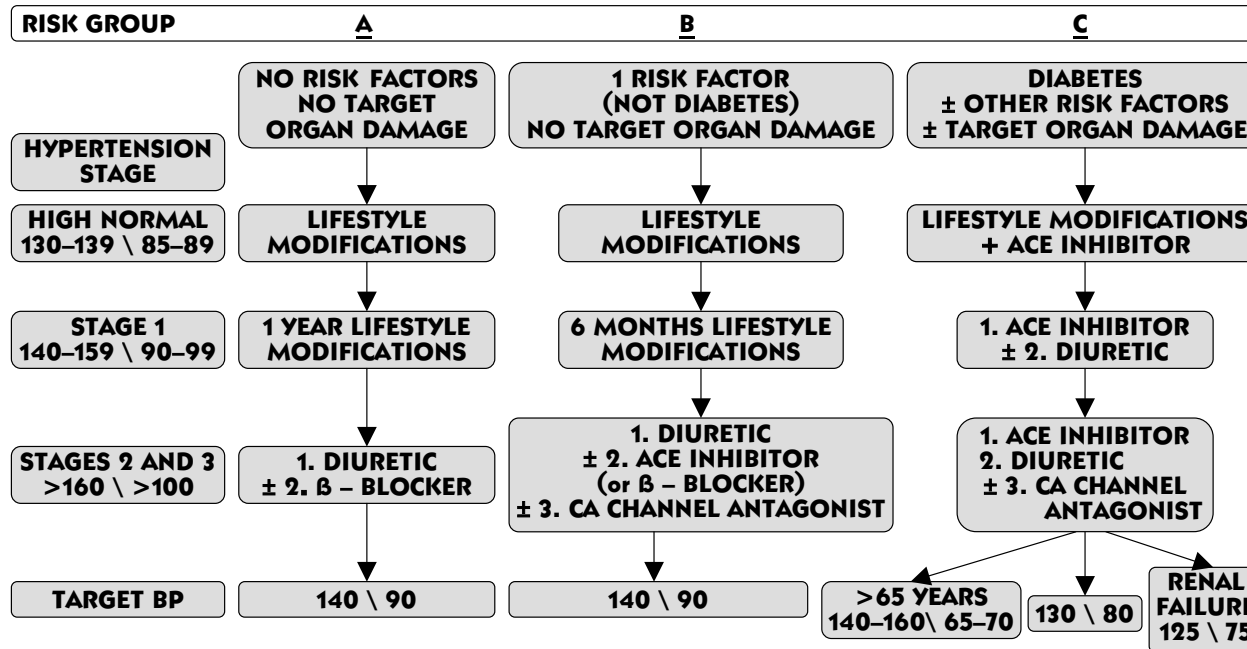
1. STOP SMOKING
2. DIET: REDUCE WEIGHT
3. REDUCE ALCOHOL
TO 14 IU \ WEEK
4. INCREASE ACTIVITY:
30 MINS AEROBIC
EXERCISE X 3 \ WEEK

INITIAL SCREENINGS:

1. CBC
2. ELECTROLYTES
3. CREATININE
4. LIPIDS
5. URINALYSIS
6. EKG
7. CXR

IF ON DIURETIC OR ACE INHIBITOR (6 MONTHLY)

1. CBC
2. CREATININE
3. ELECTROLYTES

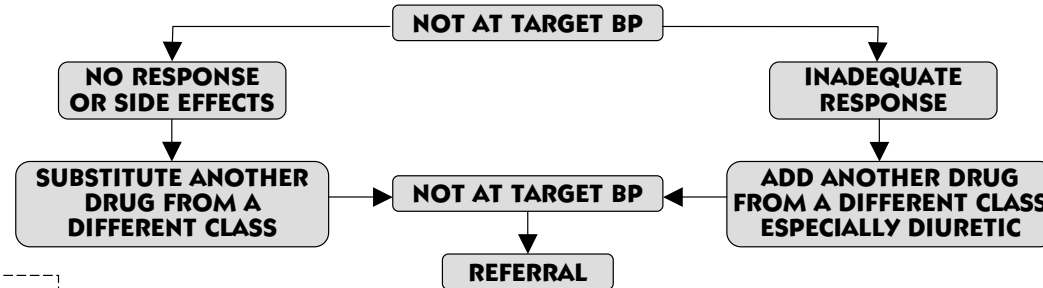


TARGET ORGAN DAMAGE

1. HEART :
LV HYPERTROPHY
ANGINA
PREVIOUS MI
CABG
HEART FAILURE
2. STROKE OR TIA
3. PERIPHERAL ARTERIAL DISEASE
4. RETINOPATHY

DRUG COMBINATIONS TO AVOID

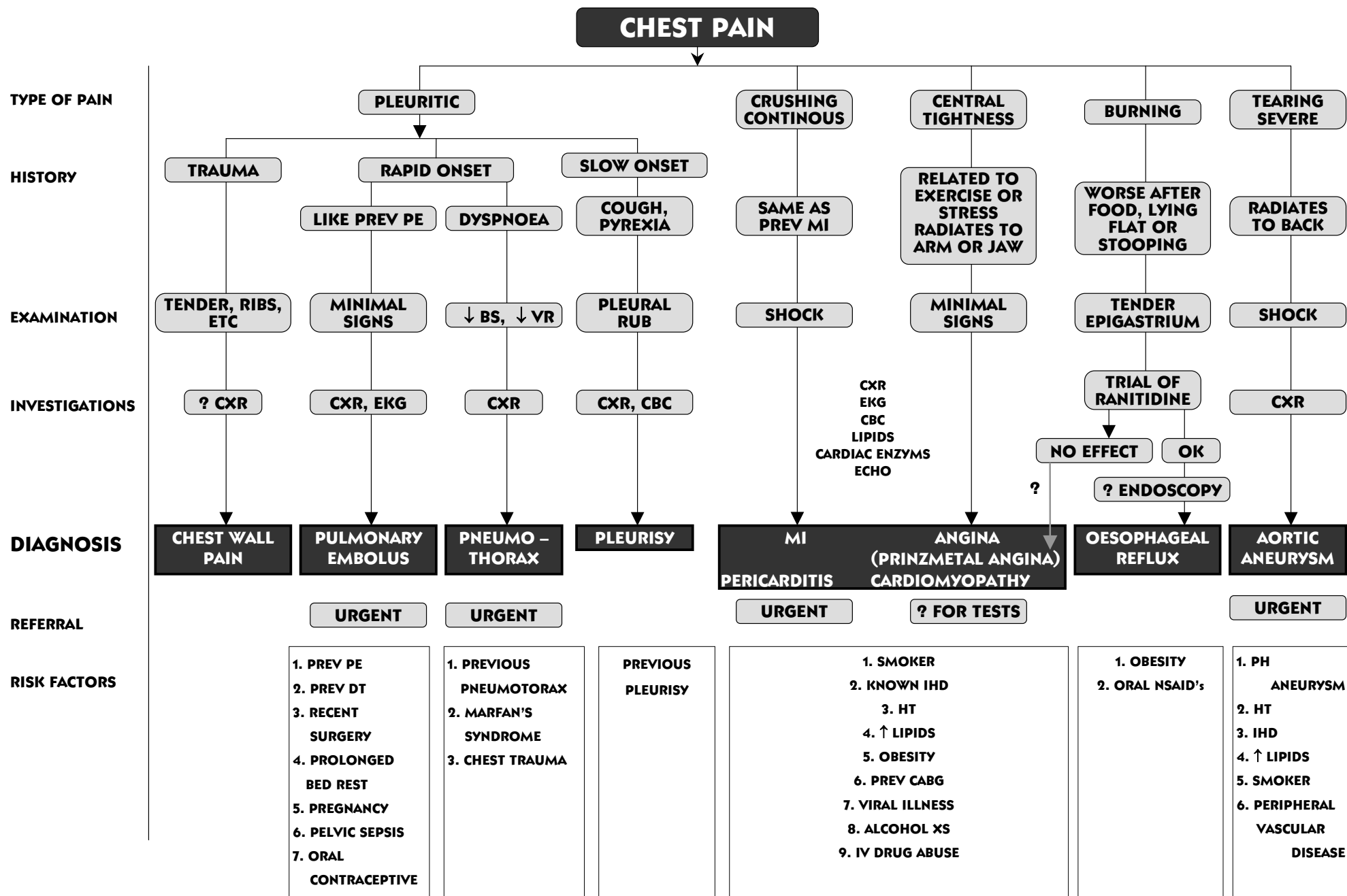
1. B-BLOCKER + VERAPAMIL OR DILTIAZEM
2. ACE INHIBITOR + ANGIOTENSIN II ANTAGONIST
3. K⁺ SPARING DIURETIC + ACE INHIBITOR



SECONDARY HYPERTENSION
PATIENTS UNDER 35 YEARS
BP NOT CONTROLLED ON 2 or 3 DRUGS
INCREASING PROTEINURIA
RENAL IMPAIRMENT (CREATININA > 180)
MALIGNANT HYPERTENSION

CAUSES OF SECONDARY HYPERTENSION :

1. RENAL PARENCHYMAL DISEASE
2. RENOVASCULAR DISEASE
3. PRIMARY ALDOSTERONISM
4. CUSHING'S SYNDROME
5. PHAEOCHROMOCYTOMA
6. COARCTATION



STAGE 1

**INFREQUENT
ATTACKS WITH
PRECIPITATING
FACTORS**

STAGE 2

**MORE FREQUENT
ANGINA
LIMITING ACTIVITIES**

STAGE 3

**SYMPTOMS STILL
NOT CONTROLLED**

STAGE 4

**STILL SYMPTOMATIC
DESPITE TREATMENT**

STAGE 5

**SYMPTOMS
NOT CONTROLLED**

ANGINA

**GTN SPRAY
ASPIRIN 75 mg**

**LIPID LOWERING
AGENT IF INDICATED**

**ADD LONG – ACTING
NITRATE TO AVOID
TOLERANCE
(ISMN 60 mg CR)**

PATIENT OK WITH β – BLOCKER

YES

NO

**ADD ATENOLOL,
METOPROLOL or
BISOPROLOL**

**ADD CALCIUM CHANNEL
BLOCKER, eg :
DILTIAZEM or AMLODIPINE**

**REFER FOR INVESTIGATION
AND / OR
REVASCULARISATION**

TESTS :**URINANALYSIS**

BLOOD SUGAR IF POSITIVE GLUC.

EKG

CXR

CBC

LIPIDS

**TFT's }
RFT's } IF INDICATED
LFT's }**

RISK FACTORS :

1. PREVIOUS MI
2. COMORBIDITY eg: DIABETES
3. ALCOHOLISM
4. UNCONTROLLED HT
5. A/F, VALVE DISEASE, LV DYSFUNCTION,
?ANTICOAG.
6. UNDER 50's FOR CORONARY ANGIOGRAM
7. UNDER 60's FOR EXERCISE TEST
8. EXTENSIVE VASCULAR DISEASE, STROKE,
TIA, ANAEMIA, COPD
9. FAMILY HISTORY CHD/SUDDEN DEATH
MALES < 50, FEMALES < 55

HEART FAILURE

(Cardiac Output Inadequate to meet Body's Needs)

Causes :

1. HYPERTENSION
2. VALVULAR HEART DISEASE
3. CORONARY ARTERY DISEASE
4. MYOCARDIAL DISEASE:
 - a. MYOCARDIAL INFARCT
 - b. TOXINS, ALCOHOL, CYTOTOXIC DRUGS
 - c. VIRAL MYOCARDITIS
 - d. HEMOCHROMATOSIS
 - e. AMYLOIDOSIS
 - f. LIPID STORAGE DISORDER
 - g. IDIOPATHIC HYPERTROPHIC CARDIOMIOPATHY
 - h. CONGENITAL LESIONS
5. HIGH CARDIAC OUTPUT STATES:
 - a. ANAEMIA
 - b. THYROTOXICOSIS
 - c. PREGNANCY
 - d. LIVER DISEASE
 - e. BERI – BERI
 - f. A – V FISTULA

STAGE	TREATMENT	TESTS
A. <u>HIGH RISK OF HEART FAILURE (NO SYMPTOMS OF FAILURE)</u> Example : Previous MI Hypertension Hyperlipidemi	ACE Inhibitors LIFESTYLE MODIFICATIONS: Diet, Smoking, Alcohol, ↑ Exercise (Moderate) INFLUENZA Vaccines PNEUMOCOCCUS Vaccines	EKG CXR ECHO
B. <u>STRUCTURAL HEART DISEASE (NO SYMPTOMS OF FAILURE)</u> ? Signs – ↑ JVP Pulmonary Rales Peripheral Oedema	ACE Inhibitors ? β - Blockers (Good in IHD)	RFT's Cardiology Opinion
C. <u>STRUCTURAL HEART DISEASE PLUS SYMPTOMS OF FAILURE</u> a. Dyspnoea, Orthopnoea, Paroxysmal Nocturnal Dyspnoea, Oedema. b. Persistent volume overload c. Persistent Dyspnoea (Particularly in HT, Mitral Regurgitation)	ACE Inhibitors THIAZIDE Diuretics DIGOXIN Loop or K+ Sparing Diuretics or Combine Vasodilator: ISDN, HYDRALAZINE	Regular (1 Month after starting Therapy, 6-Monthly when stabilized) TFT's CBC RFT's Electrolytes
D. <u>REFRACTORY HEART FAILURE</u> Requiring Specialist Interventions Arrhythmias Thrombo – Embolic Events Acute Decompensation Drug Toxicity	I.V. Therapy Anticoagulation CABG Heart Transplant	REFER CARDIOLOGIST

PRE-DIABETES = RISK FACTOR + GLUCOSE > 100

1. ASPIRIN 325 mg \ day
2. HbA1c + 2 Hr POST GLUCOSE BLOOD SUGAR
3. TREAT RISK FACTORS
4. EDUCATION

DIET :

1. ↑ COMPLEX C H₂O TO 50 % DIET
(BREAD, POTATOES, RICE, CEREALS)
2. ↓ FRIED OR FATTY FOOD, SKIMMED MILK
3. ↓ ALCOHOL
4. ↓ SALT
5. ↓ WEIGHT
6. STOP SMOKING
7. ↑ EXERCISES

RISK FACTORS :

1. CENTRAL OBESITY
2. FAMILY HISTORY
3. GESTATIONAL DIABETES OR
DELIVERY LARGE BABY > 4 kg
4. ETHNIC GROUPS:
LATIN, BLACK, AMERICAN INDIAN,
PACIFIC ISLANDER
5. AGE OVER 60 YEARS

LONG - TERM COMPLICATIONS :

1. RETINOPATHY → BLINDNESS - CHECK YEARLY
2. NEPHROPATHY → RENAL FAILURE (CREAT >130)
3. NEUROPATHY → FOOT ULCERS
→ INFECTION → AMPUTATION
4. AUTONOMIC DYSFUNCTION
5. HIGH RISK CARDIOVASCULAR, PERIPHERAL
VASCULAR AND CEREBROVASCULAR DISEASE.

DIABETES MELLITUS

(= FASTING BLOOD GLUCOSE > 110 (6 - 1) AND \ OR
2 HOURS POST GLUCOSE LOAD > 180 (10 - 0))

1. APPROPRIATE FREQUENCY OF SELF - MONITORED
BLOOD GLUCOSE MEASUREMENT
2. APPROPRIATE DIET
3. RECOGNITION, PREVENTION AND TREATMENT OF
HYPOGLYCAEMIC SYMPTOMS
4. CONTINUOUS EDUCATION
5. 6 MONTHLY ASSESSMENT

JUVENILE
AUTO - IMMUNE
IDIOPATHIC
NEED INSULIN
KETOACIDOSIS

4 %

TYPE I

PHYSIOLOGICALLY -
BASED INSULIN

96 %

TYPE II

ADULT
OBESE
FAMILY HISTORY
INFREQUENT KETOACIDOSIS
HIGH RISK VASCULAR DISEASE

STEP CARE :

1. ORAL AGENT
2. ADD SECOND
ORAL AGENT
3. ADD NOCTURNAL
INSULIN
4. ↑ INSULIN
AS NEEDED
5. LIPID LOWERING DRUGS

TREATMENT GOALS :

SELF MONITORED BLOOD GLUCOSE 80 - 120 BEFORE MEALS
100 - 140 AT BEDTIME
180 2 HOURS AFTER MEAL

HbA1c < 6,5 if HEALTHY
< 8,0 if CARDIOVASCULAR DISEASE EVENT
< 9,0 if < 5 YEARS PREDICTED SURVIVAL

SECONDARY CAUSES - METABOLIC SYNDROME

1. HYPERTENSION
2. CENTRAL (UPPER BODY) OBESITY
3. RAISED LIPIDS
4. HIGH RISK OF VASCULAR DISEASE
5. EXOCRINE PANCREAS DISEASES:
PANCREATITIS, PANCREATECTOMY, NEOPLASIA,
CYSTIC FIBROSIS, HAEMOCHROMATOSIS
6. ENDOCRINOPATHIES: CUSHING'S SYNDROME;
ACROMEGALY, PHAEOCHROMOCYTOMA,
GLUCAGONOMA, HYPERTHYROIDISM
7. DRUGS: STEROIDS, THYROXINE, THIAZIDES,
DILANTIN, α-ADRENERGIC AGONISTS,
β-ADRENERGIC AGONISTS

REVIEW :

1. SEE 6 MONTHLY:
URINE PROTEIN
HbA1c
LIPIDS
CREATININE
2. ANNUALLY FULL EXAM:
FUNDOSCOPY
BP
SKIN
PERIPHERAL NERVES
WEIGHT

REFERRAL :

1. CHILDREN - SAME DAY
2. NEWLY DIAGNOSED DIABETICS
ESPECIALLY INSULIN - DEPENDENT
3. DIABETIC NOW PREGNANT
4. GESTATIONAL DIABETIC
5. PROTRACTED VOMITING \ KETONURIA
6. HYPERTENSION OR RAISED LIPIDS
DIFFICULT TO CONTROL
7. TARGETS NOT MET
8. COMPLICATIONS

ASTHMA AND COPD (Chronic Obstructive Pulmonary Disease)

EQUIPMENT NEEDED:

PEAK FLOW METER NEBULISER

PERENNIAL OR SEASONAL SYMPTOMS
HISTORY OF RHINITIS, SINUSITIS, NASAL POLYPS
ATOPIC DERMATITIS.
FAMILY HISTORY OF ASTHMA OR ALLERGY

COUGH, WHEEZE, DYSPNOEA, EXERCISE, INTOLERANCE

FEV1, FVC, PFR

AIRWAY OBSTRUCTION

FEV1 < 80%, FEV1\FVC RATIO < 70%
3 MONTHS\YEAR FOR 2 YEARS:
CRONIC COUGH, WHEEZE,
REGULAR SPUTUM, SMOKING,
ENVIRONMENTAL EXPOSURE

ASTHMA

50%+ REVERSAL OF OBSTRUCTION

15% OR LESS REVERSAL OF OBSTRUCTION

COPD

PEAK FLOW METER
for PATIENT

STAGE
1
2
3
4
5

MANAGEMENT;
BRONCHODILATOR
AS NESSESARY

NEEDED > DAILY

ADD
INHALED STEROID

NOT CONTROLLED

↑ INHALED
STEROID DOSE

NOT CONTROLLED

ADD
IPRATROPIUM

NOT CONTROLLED

ADD ORAL
STEROIDS

AT RISK PATIENT:

1. PREVIOUS SEVERE ATTACK
2. AFRICAN AMERICAN
3. POOR FOLLOW - UP OR REVENTION FACILITIES
4. DEPRESSION OR PSYCHOSOCIAL BEHAVIOURAL PROBLEM
5. PREGNANCY IN ASTHMATIC
6. ELDERLY (ON NON - STEROIDAL ANTI - INFLAMATORY OR B - BLOCKER) AVOID THEOPHILINE O₂ USEFUL

BRONCHODILATOR

REVIEW ALL PATIENT
REGULARLY
(1 - 6 MONTHLY AS NECESSARY)

REFER:

A - ASTHMA

1. GROWING CHILD ON:
800 µg BECLOMETHASONE
or 500 µg FLUTICASONE
INHALED\day
2. POOR CONTROL
ON MAXIMUM
DOSAGE OF DRUGS

B - COPD

1. SEVERE COPD
2. RIGHT HEARTFAILURE
3. SUSPECT PULMONARY BULLAE (HEAVY SMOKER FOR YEARS)
4. < 40 YEARS OLD WITH COPD
5. RAPIDLY DECREASING FEV1
6. SYMPTOMS WORSE THAN FALL IN FUNCTIONS TESTS
7. REPEATED INFECTIONS
8. UNCLEAR DIAGNOSIS

REVIEW 6 - MONTHLY

CLASSIFICATION:

MILD:

FEV1 60 - 80 %
MILD DYSPNOEA
SMOKER'S COUGH

MODERATE

DYSPNOEA + WHEEZE
OR MILD EXERTION
COUGH ± SPUTUM
↓ BREATH SOUND, WHEEZE

SEVERE

DYSPNOEA AT REST
LUNGS DISTENDED
PERIPHERAL OEDEMA
CYANOSIS, POLYCYTHEMIA

CXR
STOP SMOKING

Inhaled
SALBUTAMOL
or IPRATROPIUM

As above with
ONE or TWO
DRUGS

1. As above

2. 3rd DRUG

3. Trial of
ORAL STEROIDS

4. NEBULISER
At Home

TREATMENT OF ACUTE EXACERBATION:

↑ OBSTRUCTION → ↑ BRONCHODILATORS

↑ DYSPNOEA

↑ SPUTUM

PURULENT SPUTUM

7 days ANTIBIOTICS
if 2 CRITERIA

CURRENTLY ON ORAL STEROIDS
PREVIOUS RESPONSE TO STEROIDS
NO RESPONSE TO BRONCHODILATORS
FIRST ATTACK OF OBSTRUCTION

ORAL
STEROIDS

UNCONTROLLED ASTHMA IN ADULTS:

P < 110, RESP < 25, PF > 50% PREDICTED OR BEST NEBULISER SALBUTAMOL,
ASSES AFTER 30 MINS IF PF 50 - 75% GIVE 30 - 60 mg ORAL PREDNISOLONE

ACUTE SEVERE ASTHMA IN ADULTS:

SPEECH DIFFICULT, P > 110, RESP > 25, PF < 50%

O₂ 40 - 60% IF AVAILABLE, ORAL PREDNISOLONE 60 mg
NEBULISED SALBUTAMOL, ASSES 30 MIN, IF NOT OK

LIFE - THREATENING ASTHMA IN ADULTS:

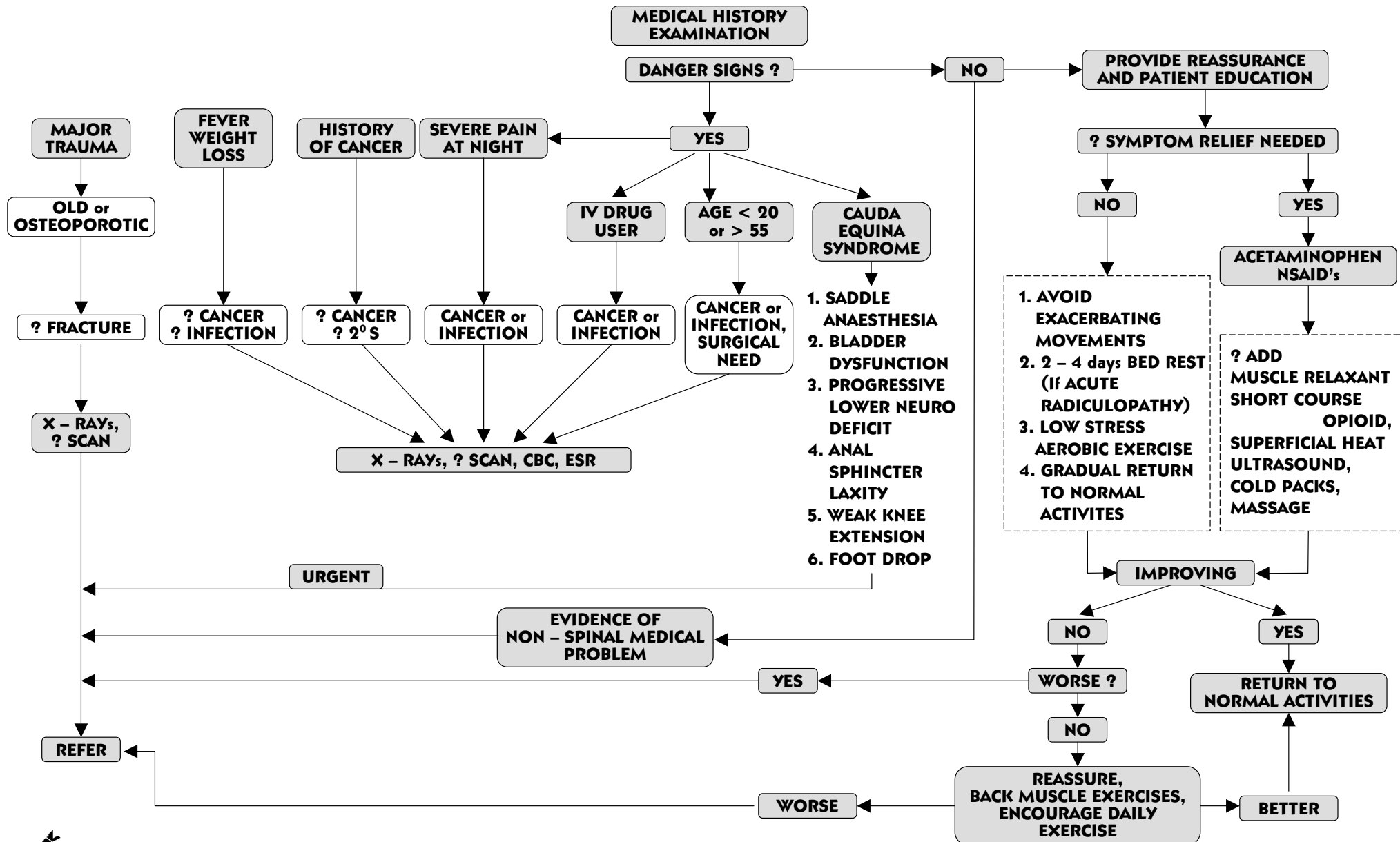
SILENT CHEST, CYANOSIS, BRADYCARDIA, PF < 33%,
ORAL PRREDNISONE 60mg, O₂ NEBULISER WITH B₂ AGONIST + IPRATROPIUM

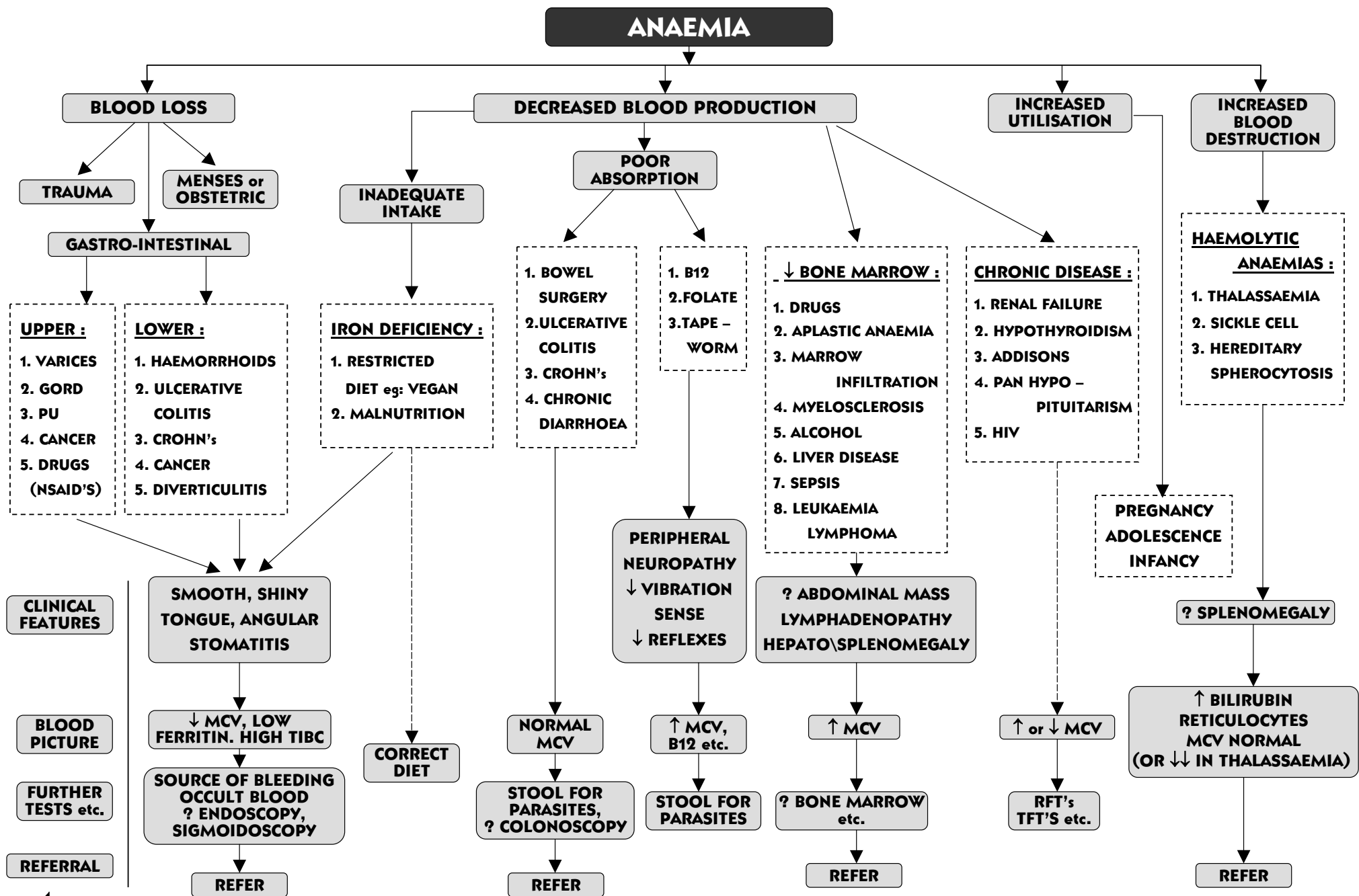
ADMIT TO
HOSPITAL

CBC = COMPLETE BLOOD COUNT
ESR = ERYTHROCYTE SEDIMENTATION RATE

ACUTE LOW BACK PAIN

ADULTS < 3 MONTHS BACK PAIN

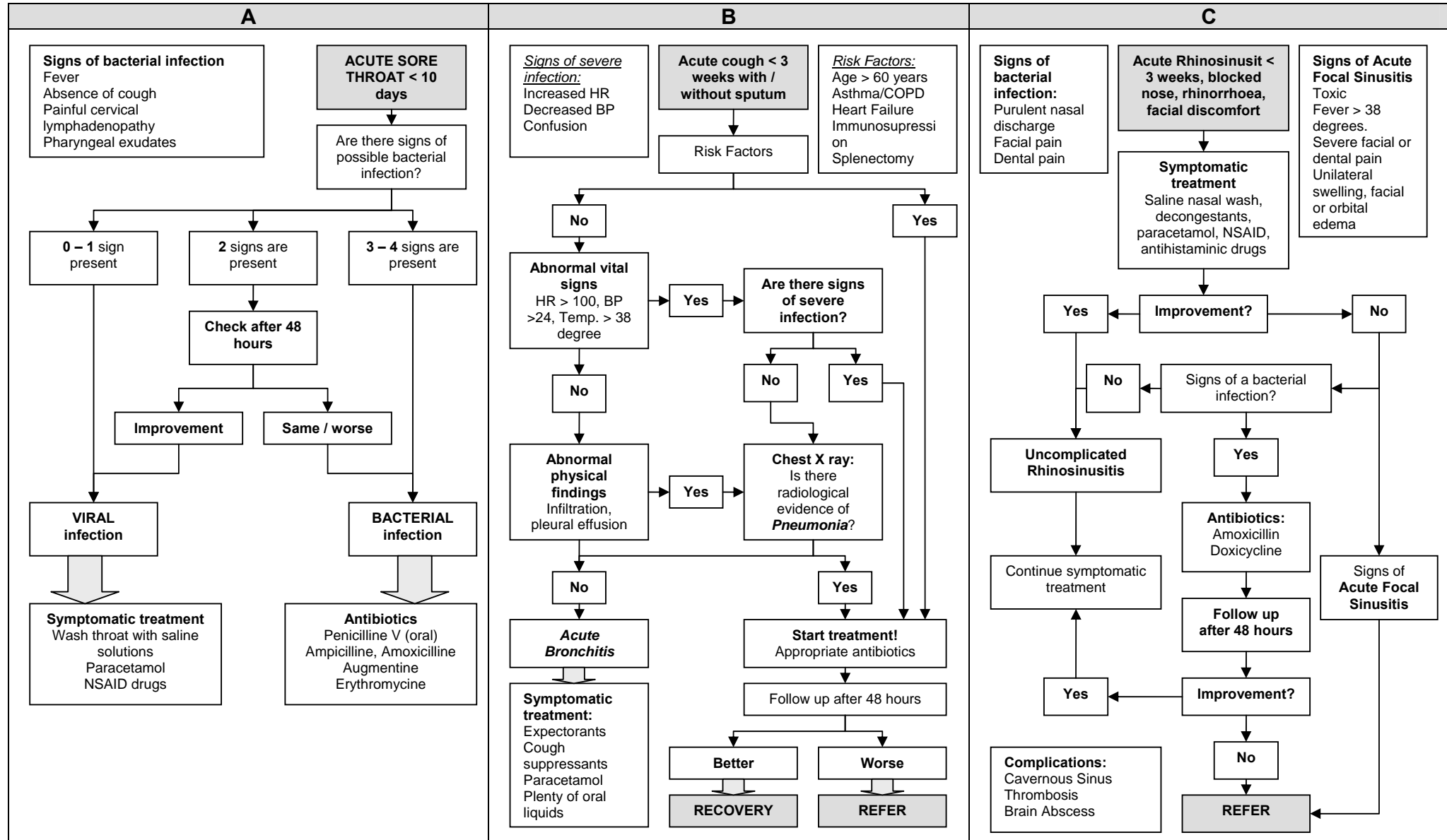




MANAGEMENT OF ACUTE RESPIRATORY TRACT INFECTIONS IN ADULTS

According to International Medical Evidence, 80 – 90% of these infections are viral, and antibiotics are of no benefit at all.

The combination of 2 or 3 symptoms (detailed in the boxes filled with grey) from the groups A, B and C suggests the presence of a viral infection



URINARY TRACT INFECTION (U.T.I.)

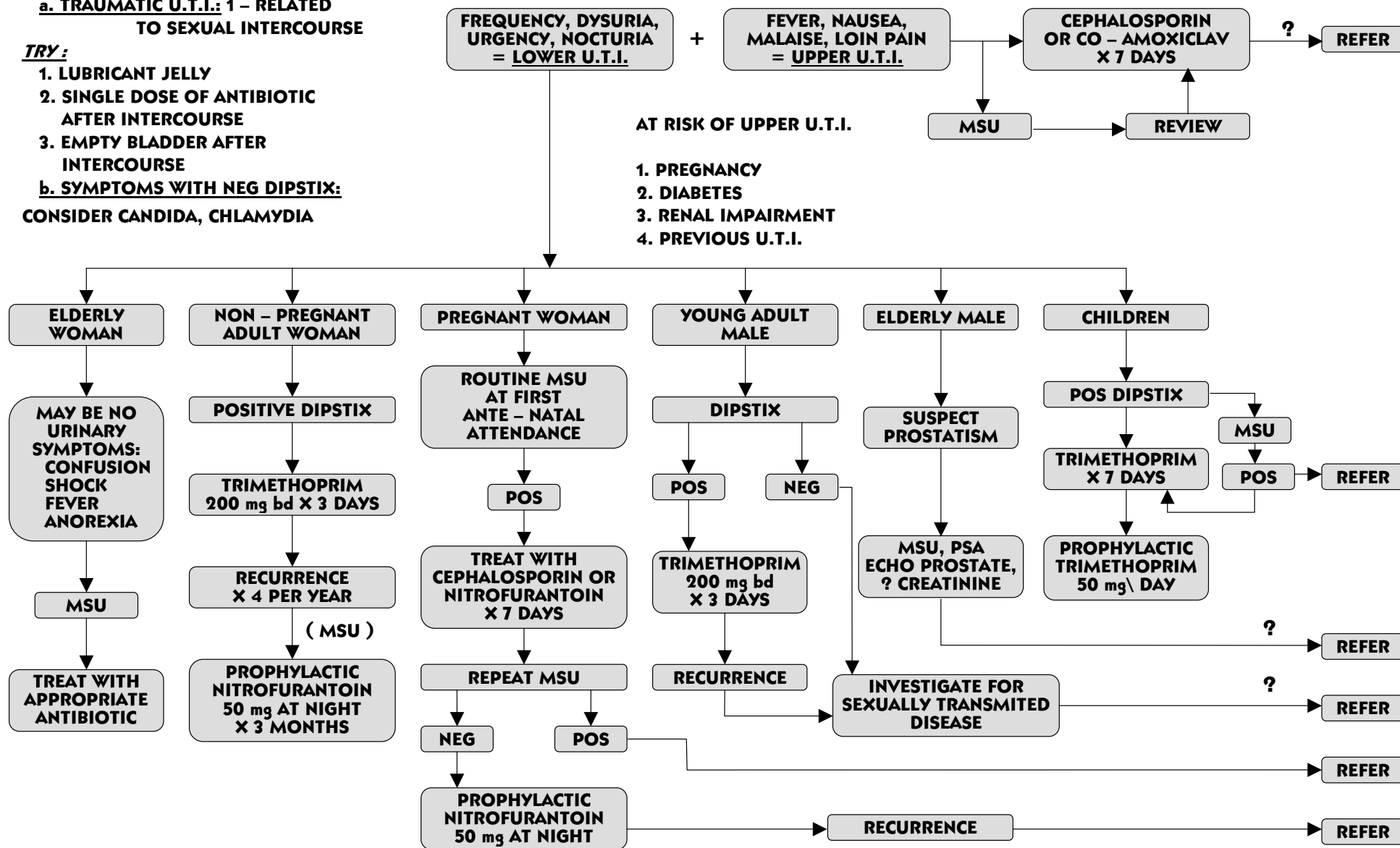
NOTES :

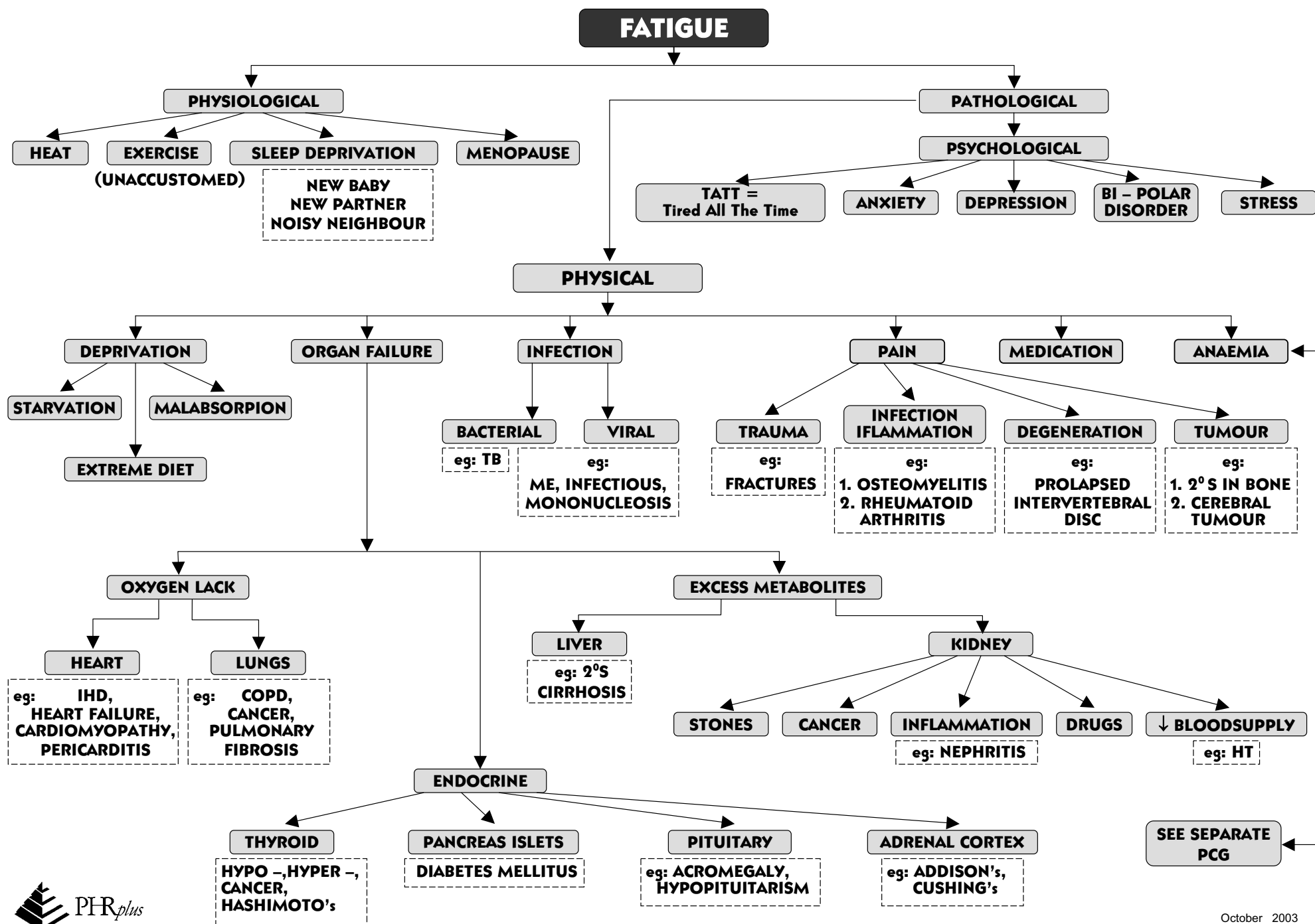
a. TRAUMATIC U.T.I.: 1 – RELATED TO SEXUAL INTERCOURSE

TRY :

1. LUBRICANT JELLY
2. SINGLE DOSE OF ANTIBIOTIC AFTER INTERCOURSE
3. EMPTY BLADDER AFTER INTERCOURSE

b. SYMPTOMS WITH NEG DIPSTIX:
CONSIDER CANDIDA, CHLAMYDIA





DEPRESSION

LOW MOOD, GUILT,
WORST IN MORNING,
EARLY MORNING WAKENING

MAKE DIAGNOSIS

SELECT AND START
TREATMENT

REVIEW EVERY 1 – 2
WEEKS TO WEEK 6

ASSESS RESPONSE
WEEK 6

CLEARLY
BETTER

CONTINUE
TREATMENT
6 MORE WEEKS

A LITTLE
BETTER

CONTINUE
TREATMENT
(ADJUST DOSE)

NO BETTER or
SIDE – EFFECTS

ADD TO
or CHANGE
TREATMENT

REVIEW 1 – 2 WEEKS

ASSESS RESPONSE
(WEEK 12)

CLEARLY
BETTER

NO BETTER

COMPLETE
REMISSION ?

NO

CONTINUE MEDICATION
for 3 – 9 MONTHS
? MAINTENANCE TREATMENT

RELAPSE

CHANGE
TREATMENT

REFER
PSYCHIATRIST

KEY DIAGNOSTIC CRITERIA :

1. LOW MOOD
2. PESSIMISM
3. SENSE OF FAILURE
4. DISSATISFACTION
5. GUILT
6. SELF – DISLIKE
7. SELF – HARM
8. SOCIAL WITHDRAWAL
9. INDECISIVENESS
10. SELF – IMAGE CHANGE
11. WORK DIFFICULTY
12. FATIGABILITY
13. ANOREXIA
14. SLEEP DISTURBANCE
- EARLY MORNING
WAKENING
15. FEELS WORST IN
MORNING

CHOICE OF MEDICATION TRICYCLICS VERSUS SSRI's

1. BOTH ARE AS EFFECTIVE
AS EACH OTHER
2. FEWER SIDE – EFFECTS WITH
SSRI's:
TRICYCLICS:
SEDATING – MAY BE GOOD
DRY MOUTH
CONSTIPATION
IMPOTENCE
URINARY RETENTION
SSRI's:
NON – SEDATING
LOSS OF APPETITE
NAUSEA
HEADACHE
OCCAS BOWEL
DISTURBANCE
3. BOTH TAKE 2 – 3 WEEKS
for BENEFIT
4. REPORTS OF ↑ SUICIDE
RISK WITH SSRI's,
NOT SUPPORTED
BY EVIDENCE.
5. TRICYCLICS MUCH CHEAPER

REMEMBER SUICIDE RISK

TEMPERATURE MANAGEMENT

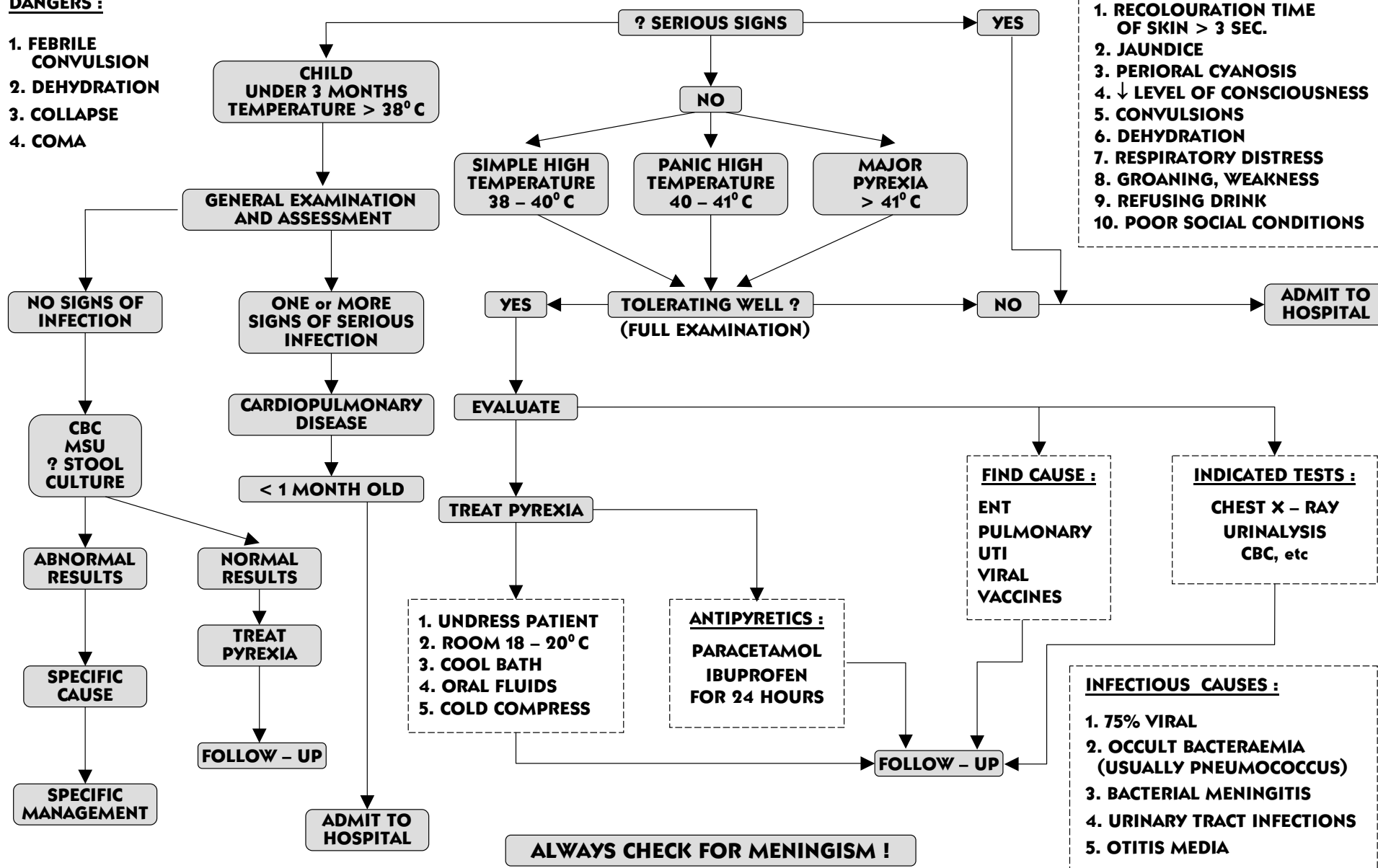
MEASURE RECTALLY, ABNORMAL $\geq 38^{\circ}\text{C}$

DANGERS :

1. FEBRILE CONVULSION
2. DEHYDRATION
3. COLLAPSE
4. COMA

SERIOUS SIGNS :

1. RECOLOURATION TIME OF SKIN > 3 SEC.
2. JAUNDICE
3. PERIORAL CYANOSIS
4. \downarrow LEVEL OF CONSCIOUSNESS
5. CONVULSIONS
6. DEHYDRATION
7. RESPIRATORY DISTRESS
8. GROANING, WEAKNESS
9. REFUSING DRINK
10. POOR SOCIAL CONDITIONS



FEBRILE CONVULSIONS

RECURRENT FEBRILE CONVULSION :

1. 33% CHILDREN WITH FC HAVE A RECURRENCE
2. RISK INCREASED IF THERE IS A FAMILY HISTORY OF FC.
3. RISK HIGHER IF MOTHER HAD FC.
4. INCREASED RISK OF RECURRENCE IF PARENTS OR SIBLINGS HAD EPILEPSY
5. SHORTER THE FEBRILE EPISODE CAUSING THE FC, THE GREATER THE RISK FOR RECURRENCE
6. RISK OF RECURRENCE IS **NOT** RELATED TO WHETHER FC WAS SIMPLE OR COMPLICATED
7. 9% OF CHILDREN HAVE AT LEAST 3 FEBRILE CONVULSIONS
8. 75% RECURRENCES ARE WITHIN 1 YEAR AFTER FIRST FC AND 90% ARE WITHIN 2 YEARS
9. IF CHILD IS < 1 YEAR OLD AT FIRST FC, RISK OF RECURRENCE IS 50%. IF CHILD IS > 4 YEARS OLD AT FIRST FC, RISK OF RECURRENCE IS 10%

EPILEPSY INCIDENCE AND FC :

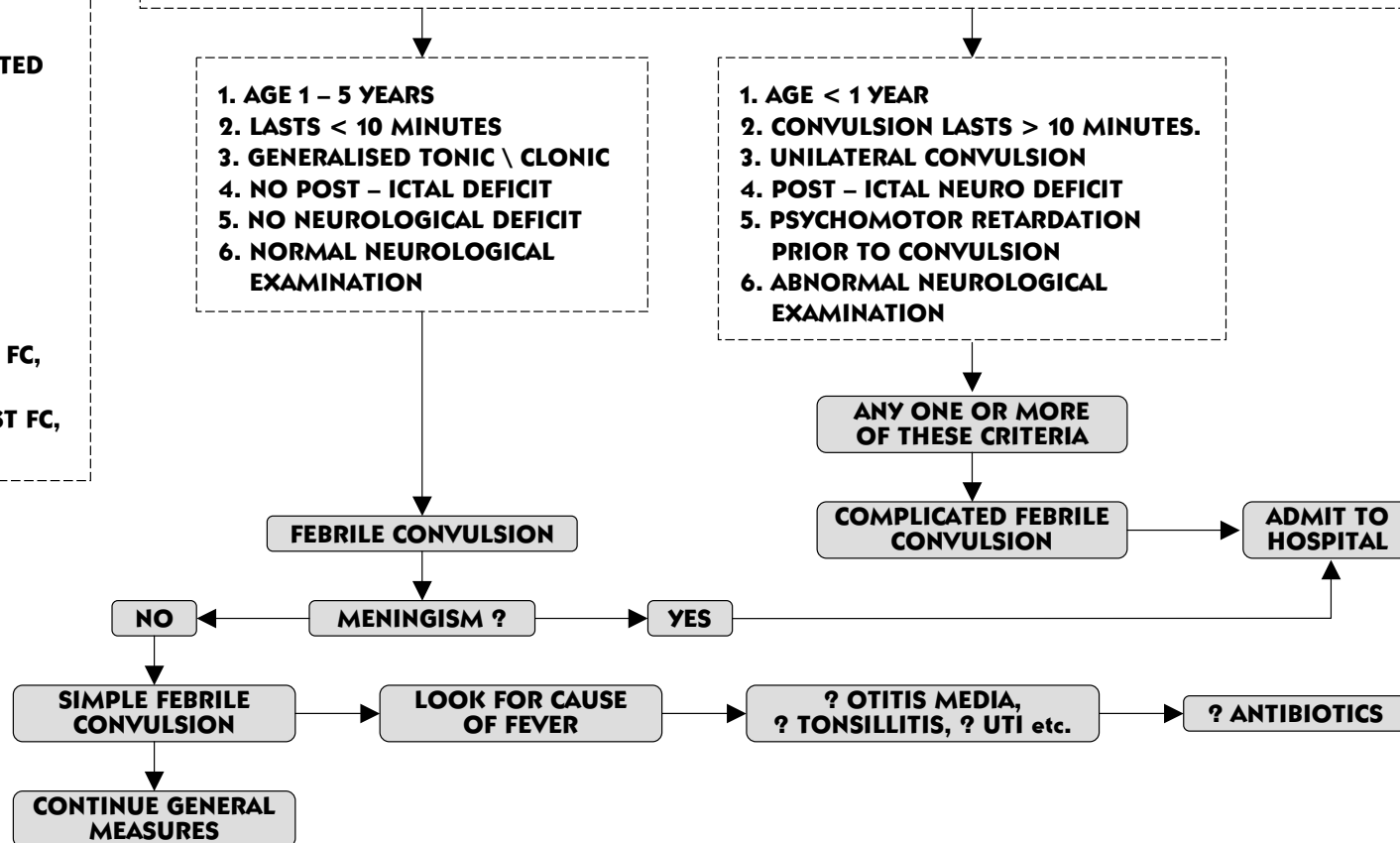
EPILEPSY RISK AFTER FC IS 2 – 4%
 7% IF 1 PRECIPITATING FACTOR
 22% IF 2 PRECIPITATING FACTORS
 49% IF 3 PRECIPITATING FACTORS

AGE 6 MONTHS TO 6 YEARS ASSOCIATED WITH FEVER > 38° C
 (USUALLY FAMILY HISTORY OF FC. FEMALES MORE OFTEN THAN MALES)

CONVULSION

IMMEDIATE TREATMENT :

1. AIRWAY: – DECUBITUS LATERALIS POSITION, EXTEND NECK, OPEN MOUTH, ANT. LUXATION OF JAW
 ? ASPIRATE GASTRIC CONTENTS, ? OXYGEN
2. THERMAL CONTROL: TAKE OFF CHILD'S CLOTHES, VENTILATE ROOM
3. OTHER POSSIBLE MEASURES: – ? INTRAVENOUS FLUIDS, ? RECTAL DIAZEPAM 0.1 – 1 mg\ kg



PAEDIATRICS

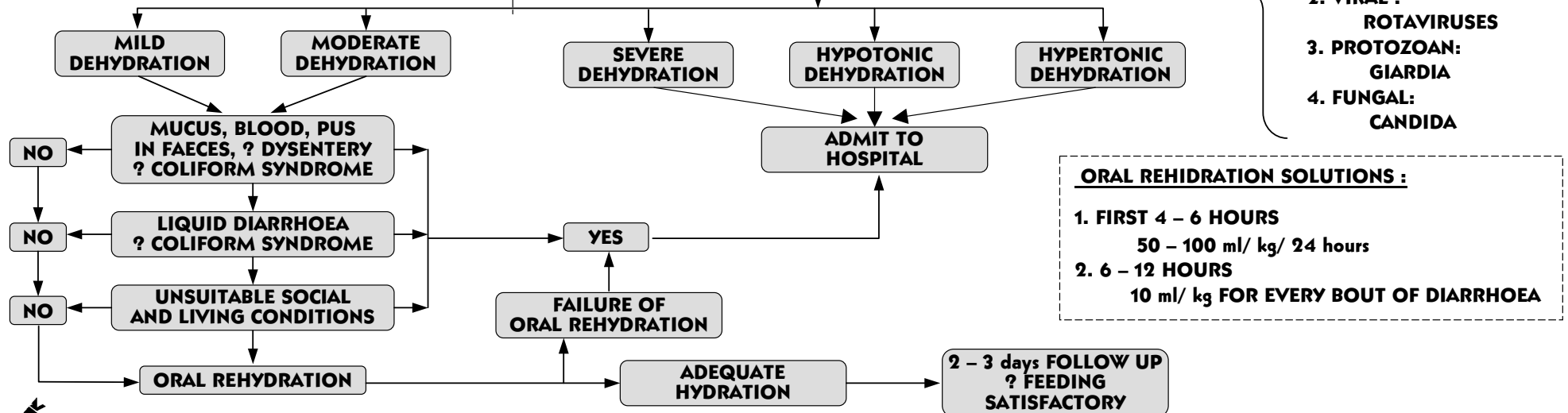
SEVERITY OF DEHYDRATION

	<u>MILD</u>	<u>MODERATE</u>	<u>SEVERE</u>
CONSCIOUSNESS	NORMAL	LETHARGIC	CONFUSED
RECOLOURATION OF SKIN	2 SEC	2 – 4 SEC	> 4 SEC
MUCOUS MEMBRANES	NORMAL	DRY	VERY DRY
TEARS	NORMAL	REDUCED	ABSENT
PULSE RATE	SLIGHTLY ↑	↑	↑ + +
RESPIRATORY RATE	NORMAL	NORMAL	↓
BLOOD PRESSURE	NORMAL	POSTURAL HYPOTENSION	↓
PULSE QUALITY	NORMAL	WEAK	VERY WEAK
SKIN TURGOR	NORMAL	SLOW RETURN	VERY SLOW RETURN
FONTANELLE	NORMAL	DEPRESSED	VERY DEPRESSED
EYEBALLS	NORMAL	SUNKEN	VERY SUNKEN
URINE VOLUME	LOW	OLIGURIA	OLIGURIA \ ANURIA

DIARRHOEA

ASSESS :

1. GRAVITY OF DIARRHOEA
2. DISORDER OF ELECTROLYTES
3. NUTRITION
4. PASSING URINE
5. SIGNS OF INFECTION



PAEDIATRICS

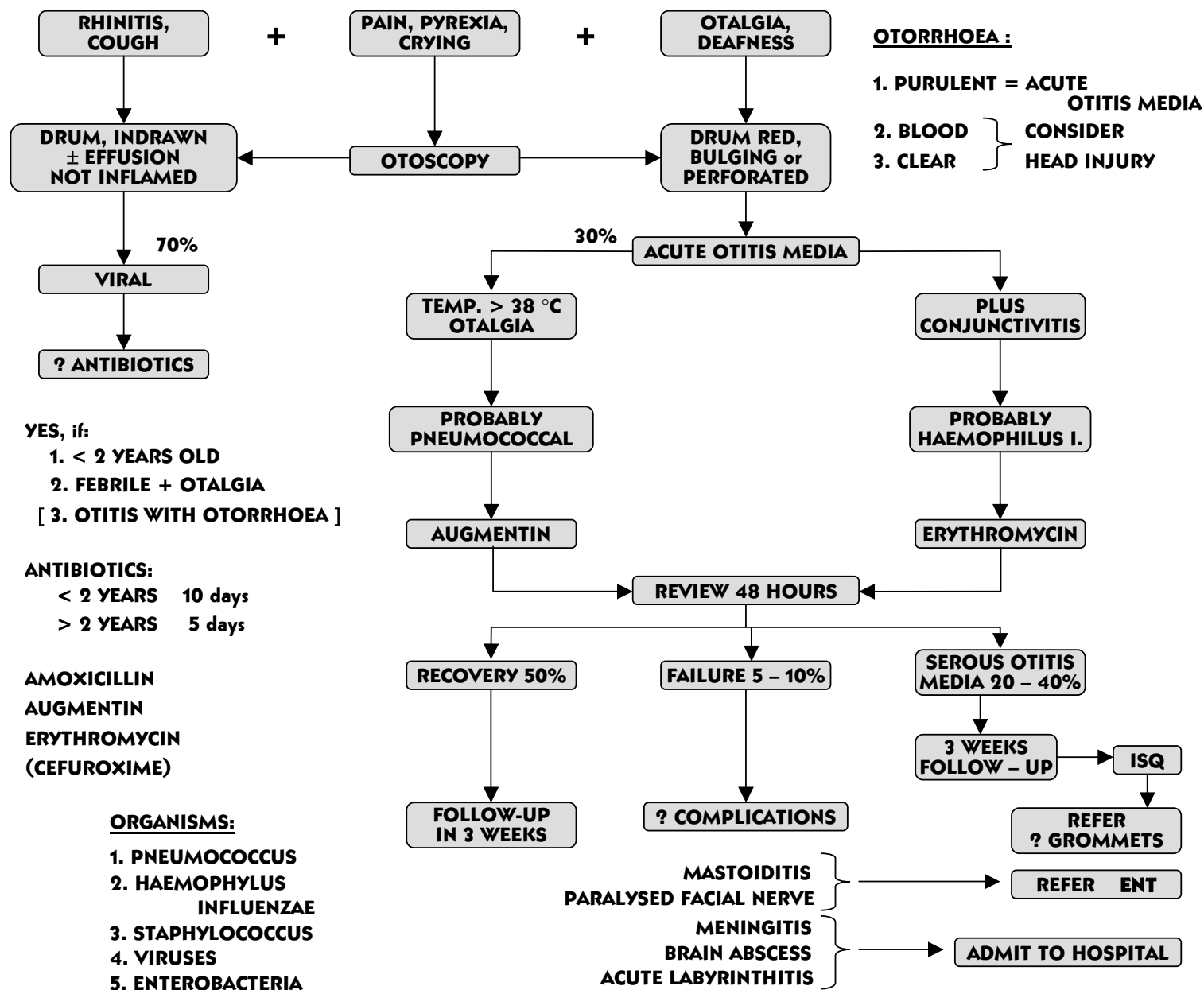
RISK FACTORS :

1. LARGE NUMBER OF CHILDREN IN FAMILY
2. LARGE GROUP COMMUNITY
3. ALLERGIC ENVIRONMENT
4. FAMILY HISTORY
5. NOT BREAST – FED
6. LOW SOCIO – ECONOMIC LEVEL
7. IRON – DEFICIENCY
8. PASSIVE SMOKING
9. CHRONIC TONSILLITIS
10. EUSTACHIAN DYSFUNCTION
11. IMMUNO – DEFICIENCY

OTHER CAUSES OF OTALGIA :

1. OTITIS EXTERNA
2. SERO – MUCOUS OTITIS
3. CHRONIC OTITIS
4. ACUTE PAROTITIS
5. DENTAL PROBLEMS
6. TONSILLITIS (REFERRED PAIN)
7. CERVICAL LYMPHADENOPATHY
8. TB

ACUTE OTITIS MEDIA



PAEDIATRICS

FEVER, PHARYNGEAL HYPERAEMIA
ENLARGED TONSILS, DYSPHAGIA
ANOREXIA, PURULENT EXUDATE
REGIONAL LYMPHADENITIS
(PETECHIAE ON SOFT PALATE = VIRAL)

=

ACUTE TONSILLITIS

TONSILLITIS

PSEUDOMEMBRANOUS

? DIPHThERIA

ADMIT
HOSPITAL

CHILD
UNDER 3 YEARS

VIRAL CAUSE

CHILD
OVER 3 YEARS

ANTIBIOTIC

PENICILLIN V
for 10 Days

MACROLIDE
for 10 Days

AMOXICILLIN
for 6 Days

CEPHALOSPORIN
for 6 days

SYMPTOMATIC TREATMENT:

1. PARACETAMOL
- ± 2. ANTIINFLAMATORY
FOR PAIN, FEVER
3. ORAL FLUIDS +

IMPROVED

REVIEW
after 2 Days

NO IMPROVEMENT

MODIFY
TREATMENT

RECOVERY

IMPROVED

NO CHANGE

EVALUATE INDICATIONS
for TONSILLECTOMY

?

REFER

UNDER AGE OF 3 YEARS :

ALMOST ALL ARE VIRAL

OVER AGE OF 3 YEARS:

70% ARE VIRAL

30% ARE BACTERIAL –
ALMOST ALL STREPT. A
(BUT REMEMBER DIPHThERIA)

RAPID STREPT. ANTIGEN TEST :

WILL GIVE A POSITIVE DIAGNOSIS FOR
STREPTOCOCCAL TONSILLITIS,
BUT IS NOT WIDELY AVAILABLE

DIFFERENTIAL DIAGNOSIS :

1. DIPHThERIA
2. INFECTIOUS MONONUCLEOSIS
3. ACUTE EPIGLOTTITIS
4. PHARYNGITIS
5. RHINOPHARYNGITIS
6. HERPANGINA
(COCKSACKIAE)

ABSOLUTE INDICATIONS :

1. DYSPHAGIA
2. UPPER AIRWAY OBSTRUCTION
(NOCTURNAL APNOEA)
3. ? TUMOUR – ASYMMETRY
4. HAEMORRHAGE

RELATIVE INDICATIONS :

1. > 5 ATTACKS \ YEAR
2. PERITONSILLAR ABSCESS
3. MOUTH BREATHING AND SNORING
4. SPEECH PROBLEMS DUE TO LARGE
TONSILS IN CHILD > 6 YEARS

BRONCHIOLITIS

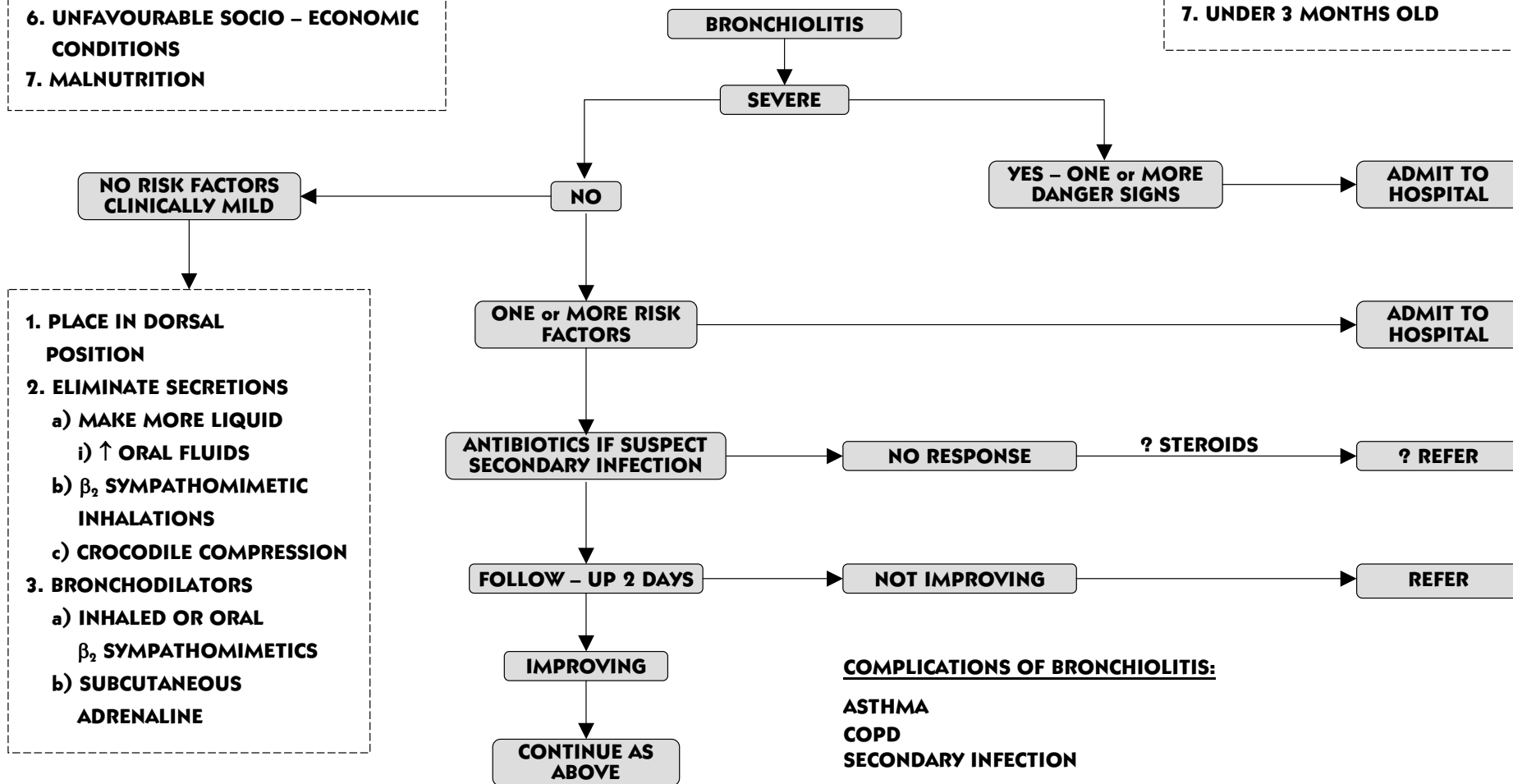
RISK GROUPS :

1. CONGENITAL HEART
2. CHRONIC RESPIRATORY
PATHOLOGY eg: MUCOVISCIDOSIS
3. IMMUNO DEFICIENCY
4. PREMATUREITY
5. < 6 WEEKS OLD
6. UNFAVOURABLE SOCIO – ECONOMIC
CONDITIONS
7. MALNUTRITION

AVERAGE AGE 8 MONTHS, VIRAL INFECTION
COMMON, INCUBATION PERIOD 5 DAYS
CHARACTERISED BY COUGH, WHEEZE, PYREXIA
SIGNS: $T^{\circ} > 38^{\circ}C$, WHEEZE ON AUSCULTATION,
RIB RECESSON, SOMETIMES RALES, OTITIS

DANGER SIGNS :

1. RESPIRATORY RATE > 60 / min
2. INTERCOSTAL RECESSON
3. SEVERE DYSPNOEA \ APNOEA
4. HYPOXIC CYANOSIS
5. ↓ LEVEL OF CONSCIOUSNESS
6. PROFUSE SWEATING
7. UNDER 3 MONTHS OLD



COMPLICATIONS OF BRONCHIOLITIS:

ASTHMA
COPD
SECONDARY INFECTION

PAEDIATRICS

LOWER RESPIRATORY TRACT INFECTION

CAUSES

BREAST FEEDING INFANTS:

1. MAJORITY VIRAL:
 - a. ADENOVIRUS
 - b. PARAINFLUENZAE
 - c. MEASLES
2. BACTERIAL:
 - a. H. INFLUENZAE
 - b. PNEUMOCOCCUS
 - c. STAPHYLOCOCCUS (RARE BUT CAUSES DAMAGE)
 - d. CHLAMYDIA (NEONATES)

OLDER CHILDREN :

1. VIRAL:
 - a. PARAINFLUENZAE
 - b. MYXOVIRUS
 - c. RHINOVIRUS
2. BACTERIAL:
 - a. PNEUMOCOCCUS
 - b. MYCOPLASMA
 - c. H. INFLUENZAE

SYMPTOMS AND SIGNS OF PNEUMONIA

NO

SEVERE ?

YES

CHEST X – RAY

SIGNS OF SEVERE INFECTION

USEFUL for :
a. DIAGNOSES,
b. RARE CONDITIONS,
c. COMPLICATIONS

YES

ADMIT TO HOSPITAL

NO

TREATMENT BASED ON AGE AND AETIOLOGY

< 2 YEARS

> 2 YEARS

ANTIBIOTIC AND SYMPTOMATIC TREATMENT

RE-EVALUATE 48 HOURS

SYMPTOMATIC TREATMENT ± ANTIBIOTIC

1. ? STEROIDS or ANTIINFLAMMATORY
2. AMOXICILLIN

1. AUGMENTIN
2. ? STEROIDS or ANTIINFLAMMATORY (for FEVER, PAIN)

CLINICAL IMPROVEMENT

THERAPEUTIC FAILURE BUT PHYSICALLY AND SOCIALLY SATISFACTORY

THERAPEUTIC FAILURE AND PHYSICAL CONDITION NOW SEVERE

ADMIT TO HOSPITAL

TREAT 10 DAYS
RE – EVALUATE 3 WEEKS

MODIFY ANTIBIOTIC THERAPY,
CHANGE TO MACROLITE,
CEFUROXIME, ERYTHROMYCINE

BETTER

RE-EVALUATE 48 HOURS

NOT BETTER

SIGNS OF SEVERE INFECTION :

1. RESPIRATORY RATE >60 INFANTS
> 30 OLDER CHILDREN
2. CYANOSIS OR ↓ RESPIRATION
3. HYPERCAPNIA
4. NOT EATING
5. CIRCULATORY COLLAPSE
6. ↓ CONSCIOUSNESS
7. DEHYDRATION

ADMIT TO HOSPITAL:

1. CHILDREN <3 MONTHS (AND ? <6 MONTHS)
2. RADIOLOGICAL EVIDENCE OF
 - a. MASSIVE PNEUMONIA
 - b. PLEURAL EFFUSION
 - c. PNEUMOTHORAX
 - d. MEDIASTINAL ADENOPATHY

RISK FACTORS:

1. COMORBIDITY
 - a. MUCOVISCIDOSIS
 - b. CONGENITAL HEART LESION
 - c. IMMUNODEFICIENCY
2. SOCIAL CONDITIONS
 - a. DIFFICULT TO TREAT AT HOME
 - b. POOR FOLLOW – UP

GROWTH

AGE	WEIGHT	HEIGHT
BIRTH	ALBANIAN BABIES 3 – 3.2 Kg (BOYS 150 g > GIRLS) NORMAL BIRTH WEIGHT ≥ 2.5 Kg WEIGHT LOST AFTER BIRTH REGAINED BY DAY 12	50 – 51 cm NORMAL ≥ 47 cm
6 MONTHS	BIRTH WEIGHT DOUBLED	
1 YEAR	BIRTH WEIGHT TRIPLED	72 – 75 cm
3 YEARS	BIRTH WEIGHT QUADRUPLD	AT 2 YEARS 81 – 84 cm
ANNUALLY	AFTER AGE OF 2 YEARS, 2 Kg GAINED EACH YEAR	

FACTORS AFFECTING GROWTH :

1. NUTRITION
2. INFECTION
3. LIVING CONDITIONS (eg: HYGIENE)
4. PHYSICAL ACTIVITY
5. DRUGS
6. CULTURE, ECONOMIC AND SOCIAL CONDITIONS
7. EFFECTIVE RELATIONS WITH OTHERS

0 – 4 WEEKS	2 MONTHS	4 MONTHS	6 MONTHS
1. CUDDLES 2. REGARDS FACE 3. SYMMETRICAL MOVEMENTS 4. FOLLOWS TO MIDLINE WITH EYES AND FIXES 5. RESPONDS TO SOUND/VOICE 6. HEAD UP WHEN PRONE AT 1 MONTH 7. FLEXED POSTURE 8. CONSOLED WHEN CRIES 9. STAYS AWAKE > 1 hour 10. PARENT/CHILD INTERACTION	1. SMILES RESPONSIVELY 2. LISTENS TO BELLS/VOICES 3. VOCALIZES 4. WHEN PRONE, LIFTS HEAD, NECK, UPPER CHEST WITH FOREARM SUPPORT 5. SOME HEAD CONTROL IN UPRIGHT POSITION	1. SQUEALS, LAUGHS, BABBLES 2. FOLLOWS THROUGH 180° 3. GRASPS 4. OPENS HANDS, PUTS HANDS TOGETHER, HITS AT OBJECTS 5. HEAD ERECT ON SITTING, HOLDS HEAD WELL, IN PRONE POSITION HEAD UPRIGHT, RAISES BODY ON HANDS 6. ROLLS OVER 7. RECOGNISES PARENT 8. COMFORTS SELF	1. COOS, COPIES, BABBLE 2. REACHES FOR OBJECT, GRASPS 3. TRANSFERS 4. NO HEAD LAG ON PULL TO SIT 5. SITS, MINIMAL SUPPORT 6. STANDS WHEN PLACED, BEARS WEIGHT 7. IF LITTLE SOCIAL CONTACT, AVOIDS EYE CONTACT, INFREQUENT VOCALISATION ? LACK OF ATTENTION OR DELAYED DEVELOPMENT

PAEDIATRIC DEVELOPMENTAL MILESTONES

9 MONTHS	12 MONTHS	15 MONTHS	18 MONTHS
<ol style="list-style-type: none"> 1. LOOKS FOR FALLEN OBJECT 2. SHAKES, BANGS, THROWS OBJECT 3. Pincer GRIP, POKES WITH FINGER, SELF-FEEDS WITH FINGER 4. MAMA, DADA 5. SITS WITHOUT SUPPORT 6. STANDS HOLDING ON 7. CRAWLS 8. RESPONDS TO OWN NAME 9. UNDERSTANDS NO, GOODBYE 10. IMITATES VOCALISATION 11. PLAYS INTERACTIVE GAMES 12. FIRST TEETH 	<ol style="list-style-type: none"> 1. BANGS TWO BLOCKS TOGETHER 2. MAMA/DADA PLUS 1 – 3 WORDS 3. STANDS ALONE 2 – 3 SECONDS 4. A FEW STEPS ALONE 5. SOCIAL GAMES 6. POINTS FINGER, PRECISE Pincer GRIP 7. WAVES GOODBYE 8. FEEDS SELF 9. DRINKS FROM CUP, USES SPOON 10. SEARCHES FOR OBJECTS 	<ol style="list-style-type: none"> 1. INDICATES THINGS HE/SHE WANTS 2. ROLLS BALL 3. PICKS UP DROPPED TOY 4. WALKS WELL 5. 3 – 10 WORDS 6. POINTS TO 1 OR MORE BODY PARTS 7. UNDERSTANDS SIMPLE COMMANDS 8. LISTENS TO STORY 9. STACKS TWO BLOCKS 	<ol style="list-style-type: none"> 1. DRINKS FROM GLASS 2. REMOVES CLOTHES 3. SCRIBBLES 4. 15 – 20 WORDS 5. WALKS UP STEPS WITH HELP 6. WALKS QUICKLY 7. THROWS BALL 8. TWO – WORD PHRASES 9. PULLS TOY 10. USES SPOON 11. STACKS 3 BLOCKS 12. KISSES 13. IMITATES WORDS

2 YEARS	3 YEARS	4 YEARS	5 YEARS	6 – 8 YEARS
<ol style="list-style-type: none"> 1. USES SPOON WELL 2. DOES SIMPLE TASKS IN HOUSE 3. SENTENCES 3 WORDS 4. KNOWS > 20 WORDS 5. KNOWS BODY PARTS 6. WALKS UP AND DOWN STEPS 7. STACKS 5 – 6 BLOCKS 8. IMITATES ADULTS 9. KICKS BALL 10. HORIZONTAL AND CIRCULAR LINES WITH PEN 11. NAMES FAMILY 	<ol style="list-style-type: none"> 1. CAN WRITE CIRCLES AND X 2. FOLLOWS SIMPLE DIRECTIONS 3. KNOWS FULL NAME, AGE AND GENDER 4. KNOWS 1 COLOUR 5. JUMPS ON THE SPOT 6. SELF – CARE 7. IMAGINATIVE BEHAVIOUR 8. USES PLURAL WORDS 	<ol style="list-style-type: none"> 1. RECOGNISES 3 – 4 COLOURS 2. PUTS TOYS AWAY 3. KNOWS WHAT " I " MEANS 4. HOPS/JUMPS WITH ONE FOOT 5. FULL SENTENCES 6. SINGS SONGS 7. DRAWS PERSON WITH 3 PARTS 8. TOWER OF 10 BLOCKS 9. AWARE OF GENDER 10. THROWS BALL OVERHAND 11. USES UTENSILS 	<ol style="list-style-type: none"> 1. UNDERSTANDS OPPOSITES OF WORDS 2. CAN DRESS UNAIDED 3. DRAWS DIFFERENT THINGS, PERSON WITH HEAD, BODY, LIMBS 4. KNOWS ADDRESS, PHONE NUMBER 5. COUNTS ON FINGERS 6. COPIES TRIANGLE, SQUARE 7. RECOGNISES LETTERS OF ALPHABET 	<ol style="list-style-type: none"> 1. OUTSIDE ACTIVITIES 2. INTERACTS WITH PEERS 3. KNOWS DAYS OF WEEK 4. WHEN IN SCHOOL, READS FOR PLEASURE 5. INCLUDES SELF IN SCHOOL ACTIVITIES 6. TELLS TIME 7. SKIPS WITH ROPE 8. HAS A BEST FRIEND

NORMAL ANTENATAL CARE

An adequate Antenatal Care reduces 17 times the Mother mortality rate, 6 times the Perinatal mortality rate and 3 times the Low Birth Weight.

To achieve this is strongly recommended to:

Encourage pregnant women to do at least 6 antenatal consultations, which are recommended to be done in the following periods *if the pregnancy is considered repeatedly normal*:

Consultation's elements:	I Consultation	II Consultation (w. 12)	III Consultation (w. 16 – 18)	IV Consultation (w. 20 – 24)	V Consultation (w. 28)	VI Consultation (w. 34 – 38)
Aims & Objectives	Positive diagnoses of the intrauterine pregnancy Pregnancy age and excepted day of delivery Ask for basic Lab Tests Suspect, diagnose & manage High Risk Pregnancies	Careful evaluation of the Lab test results Determination of the pregnancy Risk Group <i>(write it in the medical record)</i> Further management of pregnancy according to the Risk Group	Confirm the normal ongoing of pregnancy Check fetal development Ensure maternal wellbeing	Confirm the normal ongoing of pregnancy Check fetal development Ensure maternal wellbeing Ultrasound screening of fetal malformations <i>(to be done before 24-th week).</i>	Evaluate for early diagnoses of pregnancy disorders of the III-rd Trimester. Evaluate & monitor the fetal wellbeing <i>(according to the Albanian Law, the fetus in this moment is considered viable)</i>	Evaluate for early diagnoses of pregnancy disorders of the III-rd Trimester. Determine the fetal presentation & position as well as delivery strategy Breast examination (prepare for breastfeeding)
Clinical & obstetrical Examination	Personal History Family History Detailed Obstetrical History General Physical Examination and pelvic examination <i>(with patient's consent only)</i>	Personal History <i>(to be completed)</i> Family History <i>(to be completed)</i> Detailed Obstetrical History <i>(plus information about actual pregnancy)</i> General Physical Examination and pelvic examination <i>(with patient's consent only)</i>	Personal History <i>(to be completed)</i> Family History <i>(to be completed)</i> Detailed Obstetrical History <i>(plus information about actual pregnancy)</i> General Physical Examination and pelvic examination <i>(with patient's consent only)</i>	Personal History <i>(to be completed)</i> Family History <i>(to be completed)</i> Detailed Obstetrical History <i>(plus information about actual pregnancy)</i> General Physical Examination and pelvic examination <i>(with patient's consent only)</i>	Personal History <i>(to be completed)</i> Family History <i>(to be completed)</i> Detailed Obstetrical History <i>(plus information about actual pregnancy)</i> General Physical Examination and pelvic examination <i>(with patient's consent only)</i> <ul style="list-style-type: none">Fetal Heart BeatAbdominal Examination of the uterus	Personal History <i>(to be completed)</i> Family History <i>(to be completed)</i> Detailed Obstetrical History <i>(plus information about actual pregnancy)</i> General Physical Examination and pelvic examination <i>(with patient's consent only)</i> <ul style="list-style-type: none">Fetal Heart BeatAbdominal Examination of the uterus
Lab Tests	CBC, HgB Urinalyses Culture of urine specimen Direct microscopy of vaginal secretions Blood type & Rhesus Factor	CBC, HgB Urinalyses Direct microscopy of vaginal secretions First Obstetrical Ultrasound Anti Rhesus Immunization <i>(if mother Rh – and father Rh +)</i> Optional: serological tests for: Toxoplasmosis, Rubella CMV, HbsAg, HIV test	CBC, HgB Urinalyses Direct microscopy of vaginal secretions	CBC, HgB Urinalyses Direct microscopy of vaginal secretions Second Obstetrical Ultrasound	CBC, HgB Fasting Blood Glucose Urinalyses Direct microscopy of vaginal secretions Anti Rhesus Immunization <i>(if mother Rh – and father Rh +)</i>	CBC, HgB Fasting Blood Glucose Urinalyses Direct microscopy of vaginal secretions Third Obstetrical Ultrasound
Immunization & prophylaxis				Anti-Tetanus Vaccine (I-st doses)	Anti-Tetanus Vaccine (II-nd doses), Anti D Gammaglobuline <i>(if indicated)</i>	
Counseling & Education	Counsel & educate the pregnant women for appropriate hygiene and nutrition regimen (according to the CPG) as well as for Antenatal Care consultation's schedule.	Counsel & educate the pregnant women for appropriate hygiene and nutrition regimen (according to the CPG) as well as for Antenatal Care consultation's schedule.	Counsel & educate the pregnant women for appropriate hygiene and nutrition regimen (according to the CPG) as well as for Antenatal Care consultation's schedule.	Counsel & educate the pregnant women for appropriate hygiene and nutrition regimen (according to the CPG) as well as for Antenatal Care consultation's schedule.	Counsel & educate the pregnant women for appropriate hygiene and nutrition regimen (according to the CPG) as well as for Antenatal Care consultation's schedule. Educate pregnant women to recognize symptoms of pregnancy disorders; when to seek medical care.	Counsel & educate the pregnant women for appropriate hygiene and nutrition regimen (according to the CPG) as well as for Antenatal Care consultation's schedule. Educate pregnant women to recognize symptoms of pregnancy disorders; when to seek medical care.

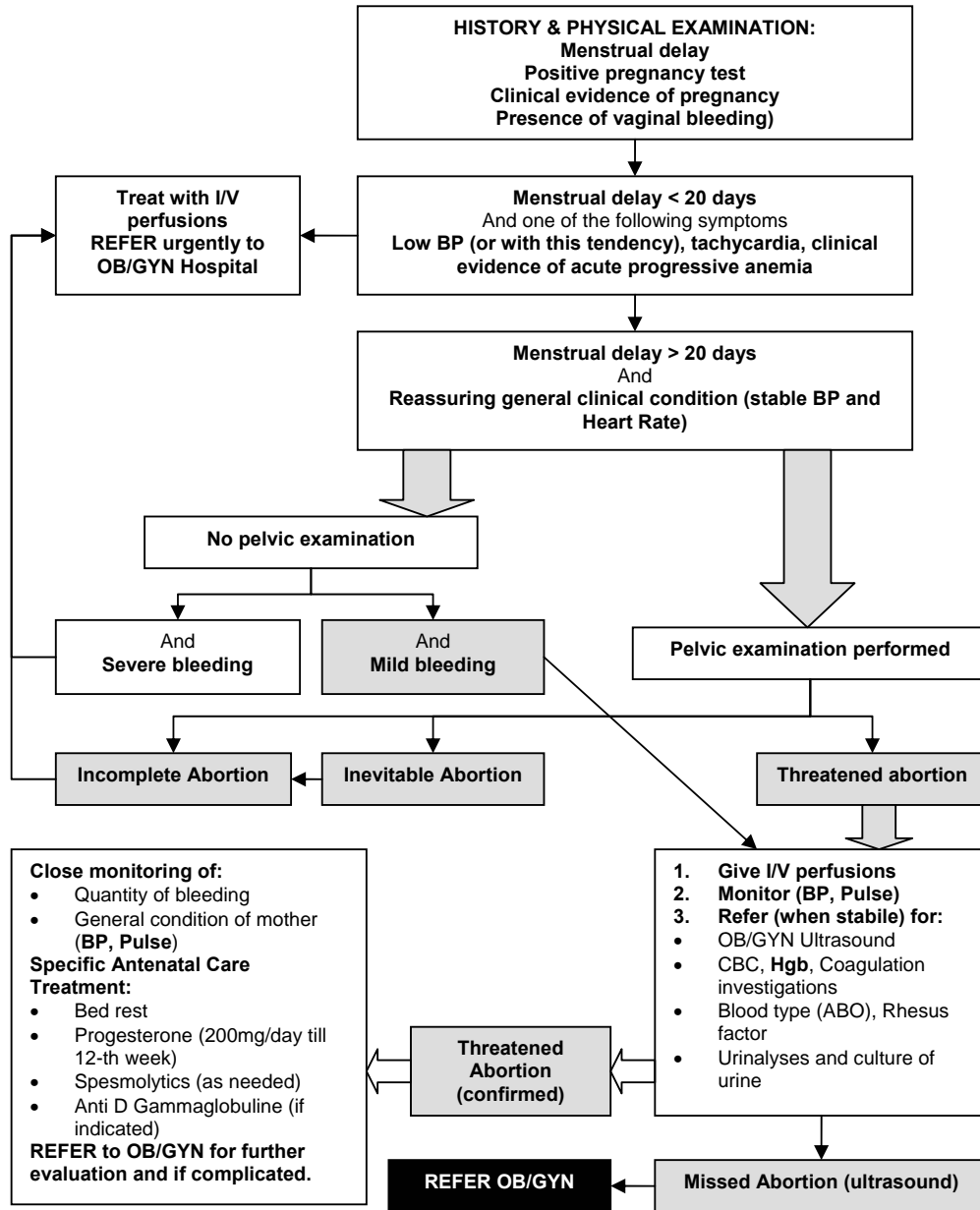
NORMAL POSTPARTUM CARE

The puerperium is considered the time between the end of the III-rd Period of Labor, till the time when all organs are back to the normal structure and function.

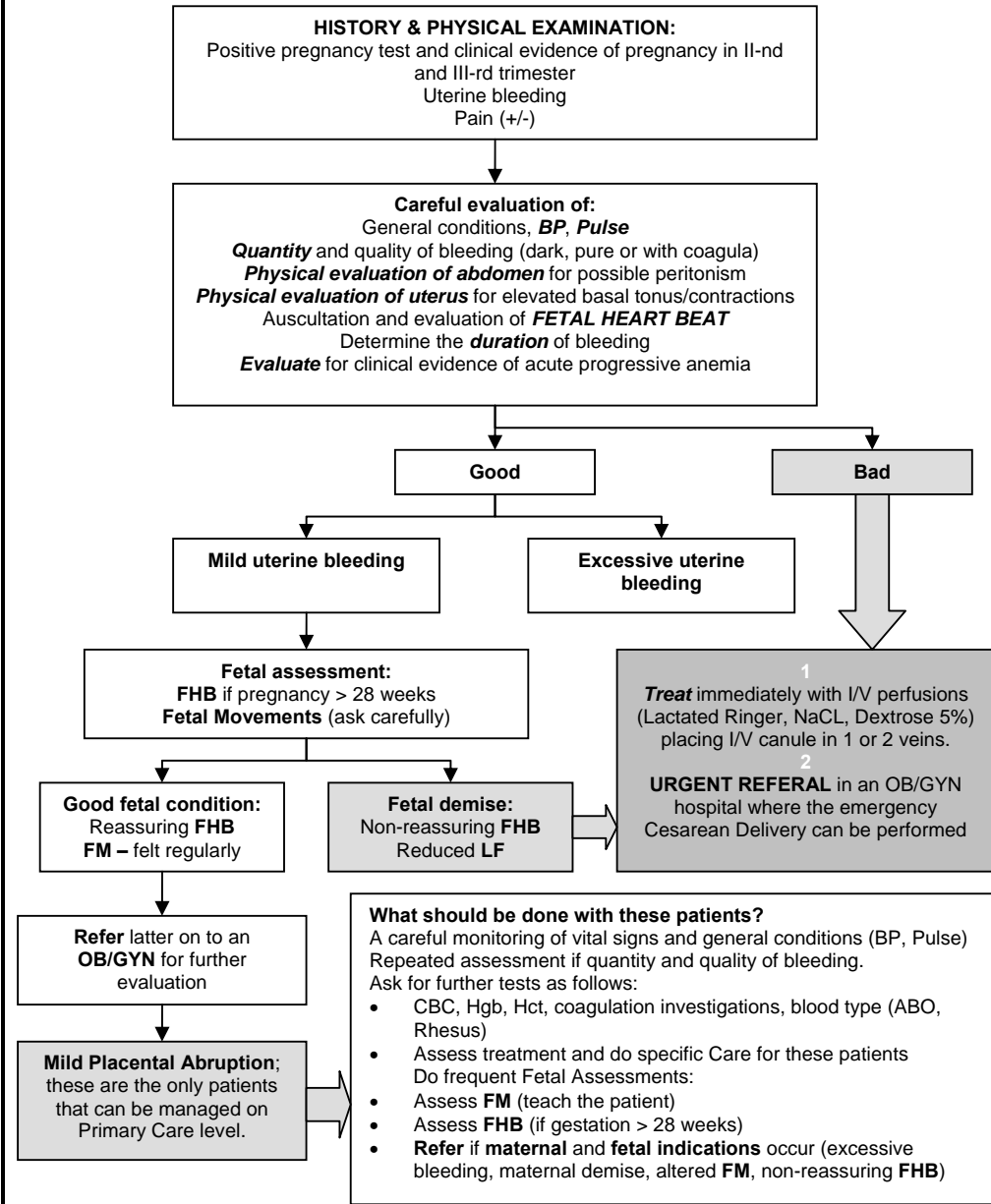
Consultation's Elements	Care during the First Postpartum Hour	Consultation before discharging from Health Center	Postnatal Consultation on days 3, 5 and 7 (especially in primiparas)	Consultation between day 7 and the 6-th week postpartum	Consultation of the 6-th week postpartum
Aims & Objectives	Ensure that the patient is and remain in good clinical condition (<i>monitor carefully for early postpartum complications</i>). Prevent the early postpartum hemorrhage.	Permit the discharge from Health Center if the necessary conditions are fulfilled. Ensure a normal puerperal period.	Ensure a normal puerperal period. Take care of the breasts & breastfeeding, especially in primiparas.	Ensure a normal puerperal period. Consider carefully all the complaints of women in postpartum period.	Ensure a normal puerperal period. Offer an adequate method of Family Planning.
Clinical & Obstetrical Examination	Patient's general condition Ask and consider the patient's complaints Physical Examination (vital signs etc) Obstetrical Examination of delivery tract (look for tears & hemorrhage)	Patient's general condition. Ask and consider the patient's complaints Urination and defecation. Physical Examination Obstetrical Examination (uterine involution, breasts, the lochia, episiotomy wound)	Patient's general condition. Ask and consider the patient's complaints Urination and defecation (the defecation must occur on day 5) Physical Examination Obstetrical Examination (uterine involution, breasts, the lochia, episiotomy wound)	Patient's general condition. Ask and consider the patient's complaints Evaluate carefully patients with previous pregnancy disorders which require monitoring. Physical Examination Obstetrical Examination (uterine involution, breasts, the lochia, episiotomy wound)	Patient's general condition. Ask and consider the patient's complaints Evaluate carefully patients with previous pregnancy disorders which require monitoring. Physical Examination Obstetrical Examination (uterine involution, breasts, the lochia)
Procedures	The patient can be washed, drink and eat. The young mother should be encouraged to stay with the newborn infant (if the newborn condition permits this).		Take off the episiotomy sutures (if non-absorbable)		
Lab Tests	CBC, Hgb Coagulation Investigations Urinalyses	If the immediate postpartum lab tests are normal, then it is not necessary to do more tests, if the clinical condition has remained stable. CBC, Hgb, Coagulation Investigations, Urinalyses (if the patient haven't done them)	If the immediate postpartum lab tests are normal, then it is not necessary to do more tests, if the clinical condition has remained stable.	If the immediate postpartum lab tests are normal, then it is not necessary to do more tests, if the clinical condition has remained stable. CBC, Hgb, Coagulation Investigations, Urinalyses (if the patient haven't done them)	CBC, Hgb Urinalyses Direct microscopy of vaginal secretions PAP Smear (refer if not available)
Immunization & Prophylaxis	Anti D Gammaglobuline (if indicated), within the first 72 hours postpartum.	Measles & Rubella immunization (if the patient has not been vaccinated before)			
Counseling & Education	Counsel & educate the patient to repose as long as desired and to drink a lot of liquids too.	Educate the patient for recognizing symptoms of Puerperal Sepsis, Postpartum Bleeding & Mastitis. Counsel to avoid intercourse and vaginal tampons for 4 weeks. Schedule appointment for Family Planning Counsel the patient to follow an appropriate diet, especially if breastfeeding. No medication without prescription if breastfeeding. Counsel the young mothers to repose as needed.	Educate the patient for recognizing symptoms of Puerperal Sepsis, Postpartum Bleeding & Mastitis. Counsel to avoid intercourse and vaginal tampons for 4 weeks. Schedule appointment for Family Planning Counsel the patient to follow an appropriate diet, especially if breastfeeding. No medication without prescription if breastfeeding. Counsel the young mothers to repose as needed.	Educate the patient for recognizing symptoms of Puerperal Sepsis, Postpartum Bleeding & Mastitis. Counsel to avoid intercourse and vaginal tampons for 4 weeks. Schedule appointment for Family Planning Counsel the patient to follow an appropriate diet, especially if breastfeeding. No medication without prescription if breastfeeding. Counsel the young mothers to repose as needed.	Discuss with patient the Birth Control plan Rise awareness for the importance of PAP Smear. Counsel women to seek adequate care in clinic where PAP Smear and cytological follow up is available.

MANAGEMENT OF UTERINE BLEEDING DURING PREGNANCY

Pregnant woman < 20 weeks with vaginal bleeding

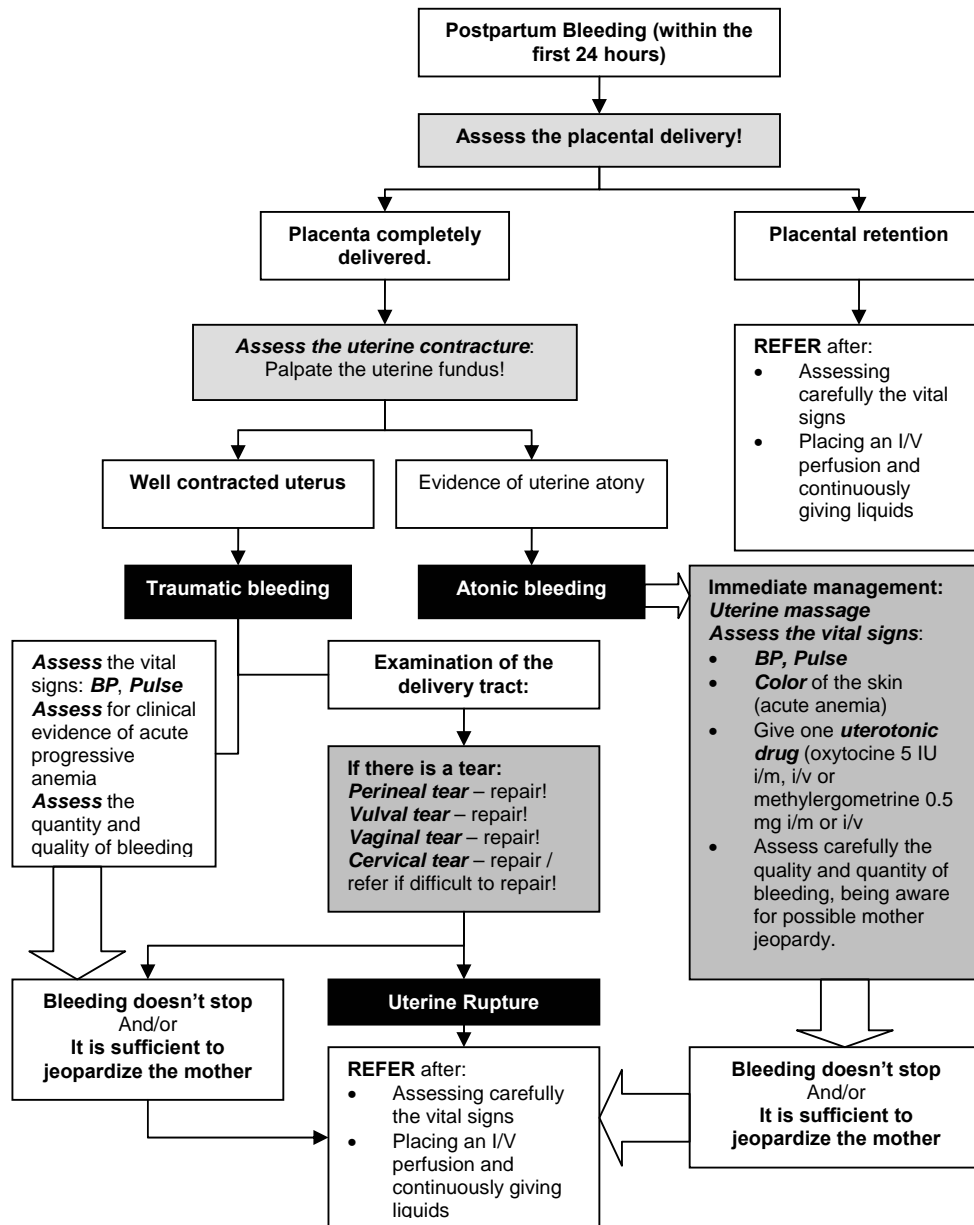


Pregnant woman > 20 weeks with vaginal bleeding

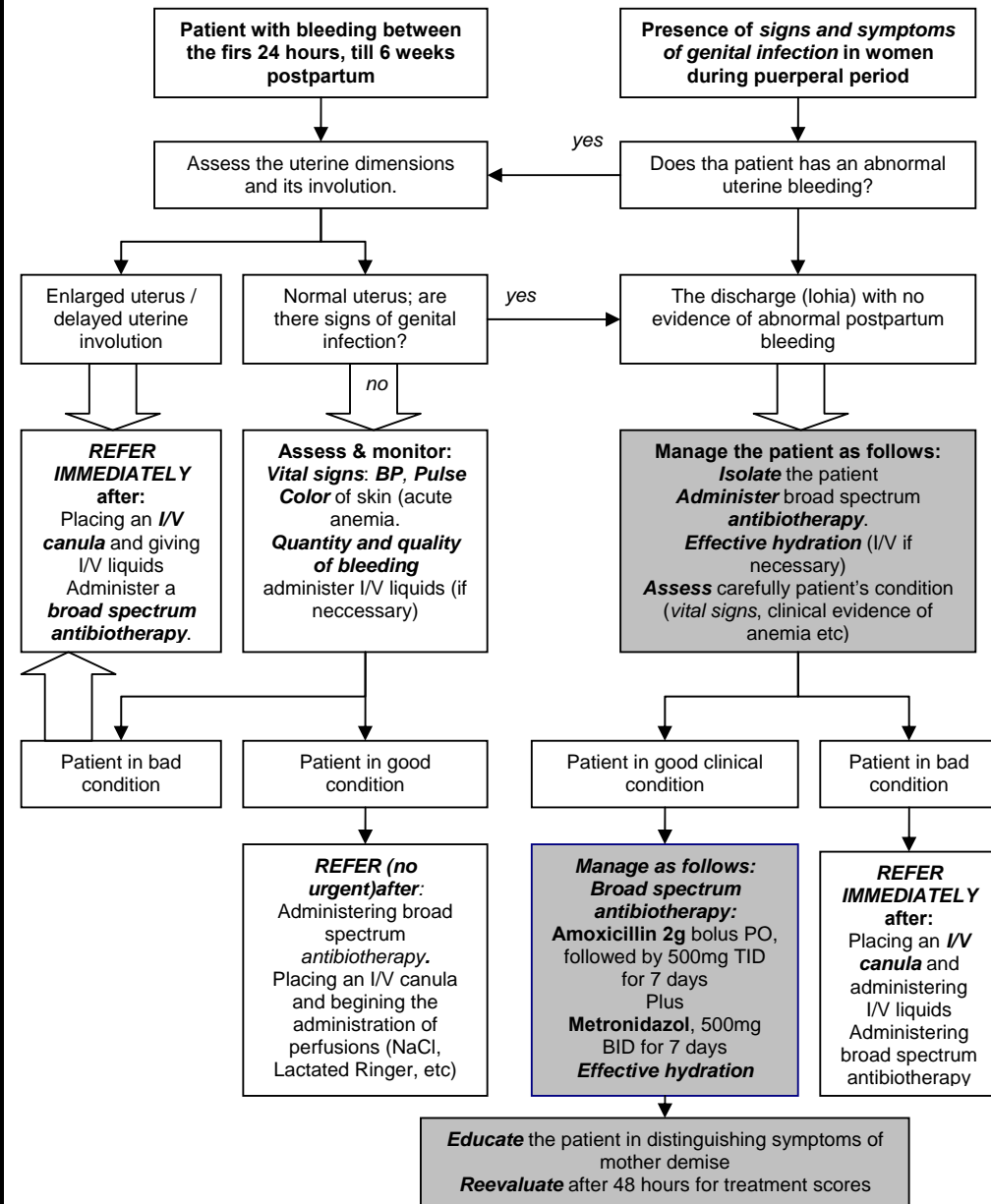


MANAGEMENT OF POSTPARTUM HEMORRHAGES AND PUERPERAL SEPSIS

Primary Postpartum Bleeding



Secondary Postpartum Bleeding and Puerperal Sepsis



Referral Guidelines

Hypertension

Refer to specialist for any of the following:

- ▲ Secondary hypertension
- ▲ Patients under 35 years
- ▲ BP not controlled on 3 drugs
- ▲ Increasing proteinuria
- ▲ Renal impairment (creatinine > 180)
- ▲ Malignant hypertension

Chest Pain

Refer to specialist if any of the following are suspected:

- ▲ Pulmonary embolus
- ▲ Pneumothorax
- ▲ MI
- ▲ Pericarditis
- ▲ Prinzmetal angina
- ▲ Cardiomyopathy
- ▲ Aortic aneurysm

Angina (Ischemic Heart Disease)

Refer to specialist in any of the following situations:

- ▲ Previous MI
- ▲ Comorbidity – eg Diabetes, COPD
- ▲ Uncontrolled HT
- ▲ Arrhythmia, valve disease, LV dysfunction
- ▲ Under 50's for coronary angiogram
- ▲ Under 60's for exercise test

- ▲ Medication resistance
- ▲ Extensive vascular disease, stroke, TIA
- ▲ Anaemia
- ▲ Family history of CHD / sudden death, males < 50, females < 55
- ▲ Diagnosis uncertain

Heart Failure

Refer to specialist if heart failure is complicated by:

- ▲ Arrhythmia
- ▲ Thrombo-Embolic Events
- ▲ Acute decompensation
- ▲ Drug toxicity
- ▲ Or if patient requires beta blockers, IV therapy, anticoagulation, investigation or CABG

Diabetes Mellitus

Refer to specialist in the following situations:

- ▲ Children – same day
- ▲ Newly diagnosed insulin-dependent diabetics
- ▲ Diabetic now pregnant
- ▲ Gestational diabetes
- ▲ Protracted vomiting /ketonuria
- ▲ Hypertensions or raised lipids difficult to control
- ▲ Targets not met
- ▲ Complications

Urinary Tract Infections

Refer to specialist in the following situations:

- ▲ Pregnant woman with second positive MSU or recurrence on prophylactic antibiotic
- ▲ Young adult when the infection is recurrent and sexuality transmitted disease suspected
- ▲ Elderly male, prostatism suspected
- ▲ Child with positive MSU
- ▲ Failure of appropriate treatment

Anemia

Refer to specialist:

- ▲ To find the source of upper or lower GI bleeding
- ▲ Endoscopy, colonoscopy, sigmoidoscopy
- ▲ When associated with hepato/splenomegaly, lymphadenopathy, abdominal mass
- ▲ When due to inflammatory bowel disease

Asthma and COPD

Refer to specialist in the following circumstances

Asthma

- ▲ Children using high dose of corticosteroids
- ▲ Poor control on maximum dosage of drugs
- ▲ Acute severe asthma not responding to treatment
- ▲ Life-threatening asthma

COPD (Chronic Obstructive Pulmonary Disease)

- ▲ Severe COPD
- ▲ COPD with heart failure
- ▲ Under 40
- ▲ Severe, decreasing FEV1
- ▲ Symptoms worse than fall in function tests
- ▲ Repeated infection
- ▲ Unclear diagnosis

Acute Low Back Pain

Refer to specialist in any of the following situations:

- ▲ **Medication resistance**
- ▲ **Worse after treatment/management strategy**
- ▲ Cauda equina syndrome
- ▲ X-Rays Scan, CBC, ESR when cancer or fracture suspected
- ▲ Evidence of non-spinal medical problem

Depression

Refer to specialist in any of the following situations:

- ▲ Medication resistance
- ▲ Relapse after full course of medication
- ▲ Suicide Risk

Fatigue

Refer to specialist in any of the following situations:

- ▲ Fatigue has pain as a factor related to bone tumor, cerebral tumor
- ▲ Prolapsed intervertebral disc, osteomyelitis, fractures, rheumatoid arthritis suspected
- ▲ Major disease suspected – eg cancer, diabetes, etc.

Acute tonsillitis

Absolute and relative indications for referral to specialist

Absolute:

- ▲ Dysphagia
- ▲ Nocturnal apnoea
- ▲ Asymmetry of tonsils
- ▲ Haemorrhage

Relative:

- ▲ No improvement after appropriate treatment
- ▲ > 5 attacks per year
- ▲ Peritonsillar abscess
- ▲ Mouth breathing and snoring
- ▲ Speech problems due to large tonsils in child > 6 years

Bronchiolitis

Refer to specialist:

- ▲ When the patient has one or more risk factors
- ▲ When the patient has one or more danger signs
- ▲ When no improvement 2 days after antibiotics

Lower Respiratory Tract Infections

Refer to specialist:

- ▲ When there are signs of severe infection clinically
- ▲ When there are risk factors present
- ▲ When there is radiological evidence of:
 - △ Massive pneumonia
 - △ Plural effusion
 - △ Pneumothorax
 - △ Mediastinal adenopathy
- ▲ When there is therapeutic failure and physical condition now severe
- ▲ When child is < 3 months (and < 6 months if physical condition poor)

Acute Otitis Media

Refer to specialist for the following complications:

- ▲ Mastoiditis
- ▲ Paralyzed facial nerve
- ▲ Persistent serous otitis media
- ▲ Therapeutic failure
- ▲ Refer to the hospital in the following conditions:
 - ▲ Meningitis
 - ▲ Brain abscess
 - ▲ Acute labyrinthitis

Diarrhoea

Refer to the hospital for any of the following conditions:

- ▲ Severe dehydration
- ▲ Failure of oral rehydration
- ▲ Surgical cause of diarrhoea
- ▲ Growth, physical, or nutritional abnormality

Febrile Convulsions

Refer to the hospital for any of these conditions:

- ▲ Complicated febrile convulsion
- ▲ Meningism

Temperature management

Refer to the hospital for any of these conditions:

- ▲ Serious signs
- ▲ Not tolerating fever well
- ▲ Meningism
- ▲ Signs of severe infection
- ▲ Cardiopulmonary disease
- ▲ Less than 1 month old

Antenatal Care

Refer to the OB/GYN specialist the following conditions related to pregnancy:

- ▲ Patients with other medical problems (Renal disease, heart problems, hepatic, pulmonary, rheumatological, neurological, psychiatric problems etc)
- ▲ Pregnant patients with hyperglycemia (every type of Diabetes)
- ▲ Patients with High Risk or Very High Risk score
- ▲ Patients with the following pregnancy related disorders:
 - △ Preeclampsia
 - △ Threatened Preterm Labor
 - △ Active Preterm Labor
 - △ Post term Pregnancy (refer in the beginning of the 41-th week)
 - △ Polyhydramnios
 - △ Oligoamnios
 - △ Evidence of Intrauterine Growth Restriction
 - △ Preterm Rupture of the Membranes
 - △ Prelabor Rupture of the Membranes
 - △ Patients with Rhesus negative blood type, especially if there is evidence of Rhesus Isoimmunisation or problematic Obstetrical history
 - △ Abnormal Fetal Presentation (breech, transversal etc, evaluated at term or during active Preterm Labor)

- △ Previous Cesarean Delivery (refer at the beginning of the 37-th week)
- △ Previous Myomectomy (refer at the beginning of the 37-th week, do this for every women undergone to gynecological operations)
- △ Patient with Infertility history
- △ Multiple Pregnancy
- △ Patients < 85 kg
- △ Wherever there is evidence of delivering a big fetus (> 4 kg) without evidence of antenatal disease, refer at term (37-th week)
- △ Patient with every type of disorders that impact the integrity of pelvic bones, including fractures of the lower limbs, TB etc (to be referred at 36 – 37-th week, or during active preterm labor)
- △ All types of pelvic viciature to be referred at term (37-th week) without occurrence of active labor.
- △ Patients that manifest any type of delay during the first period of labor (dilatation)

Bleeding during pregnancy

Refer to the OB/GYN Hospital if one of the following occurs:

- ▲ All patient with less than 20 days of menstrual delay
- ▲ Poor general condition
- ▲ Heavy bleeding with no pelvic examination
- ▲ Incomplete Abortion
- ▲ Inevitable Abortion
- ▲ Missed Abortion
- ▲ Threatened Abortion if complicated or for evaluation
- ▲ Reduced Fetal Movements
- ▲ Concern Over Fetal Heart Beat

Primary Post – Partum Haemorrhage

Refer to the OB/GYN Hospital if one of the following occurs:

- ▲ Retained Placenta
- ▲ Persistent bleeding or danger to mother (after recommended management procedures)
- ▲ Cervical tear with heavy bleeding or difficult to repair
- ▲ Ruptured uterus
- ▲ Poor general condition

Secondary Post – Partum Haemorrhage

Refer to the OB/GYN Hospital if one of the following occurs:

- ▲ Enlarged uterus / delayed involution
- ▲ Poor general condition
- ▲ Persistent bleeding

Puerperal Sepsis

Refer to the OB/GYN Hospital if one of the following occurs:

- ▲ Associated with abnormal bleeding
- ▲ Poor general condition
- ▲ Treatment failure

Referral Policy and Procedure

POLICY: Primary care physicians make referrals to specialists based on approved referral guidelines (attached) in combination with good clinical judgment.

PROCEDURE:

1. The primary care physician decides that a referral is needed.
2. The primary care physician completes the top portion of the referral form (attached) and gives to the patient to take to the specialist
3. The primary care physician gives the patient information about available specialists and timing of consultants.
4. The patient arranges the specialist visit and gives the referral form to the specialist.
5. After seeing the patient, the specialist
 - a) Completes the bottom portion of the form
 - b) Keeps the top portion of the form on file
 - c) Returns the bottom half of the page to the patient
6. The patient returns the completed form to the primary care physician, who puts the form in the patient's medical record.
7. The primary care physician communicates directly with the specialist for clarification of the treatment plan as needed.

Approved by:

Director of Primary Care

Date:

3. PHC Quality Improvement (QI) Toolkit

The PHR*plus* Project provided technical assistance to PHC managers and practitioners to develop and implement facility-based quality improvement systems and regional-level quality assurance processes. A second toolkit in the series helps to establish sustainable processes at PHC facilities that are needed to improve quality – quality committees, routine measurement of quality improvement using chart audit, patient satisfaction surveys, and monthly reports and meetings to review findings. The PHC QI system resulted in patients noticing differences in quality of care and providers feeling more empowered to create systems to improve quality themselves.

Terms of Reference – PHC QI Committee	Terms of reference for a facility-level QI committee including purpose, objectives, members, and meeting schedule
Terms of Reference – Regional/Central QI Board	Terms of reference for regional or central QI committee including purpose, objectives, members, and meeting schedule
Sample QI Report	A monthly report from a PHC facility providing a summary assessment of quality based on information from medical chart audits, patient satisfaction surveys, and the PHC health information system, as well as recommendations on improving quality
Medical Charts	Sample sections for revised PHC medical charts, including patient registration information, basic medical information, patient history, and a visit note
Chart Audit Forms	Sample forms to guide routine audit of medical charts, including a form to assess basic charting technique, as well as forms for asthma, diabetes, hypertension, acute respiratory infection, and tonsillitis
Patient Satisfaction Survey	A sample patient satisfaction survey for PHC patients and clients

Terms of Reference - PHC QI Committee

Background:

The formal quality improvement initiative at Muzakaj Health Center started in December 2003, following a regional workshop at the Tomorri Hotel. The Muzakaj Health Center has been improving quality over the past two years through its participation in the *PHRplus* project.

General Purpose:

The CQI Committee has the overall responsibility for monitoring and reporting progress on Continuous Quality Improvement at the Muzakaj Health Center. The CQI Committee is chaired by the Center Director, and the committee reports to the Regional Quality Improvement Board. The CQI Committee identifies and approves specific quality initiatives and monitors and reports progress.

Overall Objectives:

- ▲ Review / revise / approve the clinical practice guidelines annually
- ▲ Develop QA plan & review / revise annually
- ▲ Set specific quality improvement objectives for the year
- ▲ Determine what will be monitored and how
- ▲ Approve special quality topics for special study
- ▲ Monitor / assure the integrity of the encounter form and health information system
- ▲ Monitor / assure the integrity of the patient satisfaction system
- ▲ Monitor / assure the integrity of the clinical chart audit
- ▲ Document the use of data in improving quality

Members:

- ▲ Chair/Leader: Donika Papa
- ▲ Secretary: Emarjola Bako
- ▲ Physician representatives: Marguarita Xheblati, Adelina Nohini
- ▲ Nursing representatives: Saolete Meleqi, Mimoza Bojarhi

Proposed meeting schedule:

Monthly

Evaluation and Reporting Requirements

- ▲ Monthly report submitted to the Regional QI Board
- ▲ Annual report to include a list of accomplishments as well as routine reports on CQI activities.

Terms of Reference – Regional/Central QI Board

Background

The experience of the PHR*plus* pilot project created the right conditions (functioning QI work at facility level, evidence produced at the regional level and local demand for central participation) for the creation of a Central QI Board. The Board, initiated by the Deputy Minister of Health, is designed to provide strategic direction and oversight regarding the development and implementation of a system of quality improvement for primary health care (PHC).

Objectives

- ▲ Develop annual planning process and develop/revise strategic objectives for PHC quality;
- ▲ Make recommendations regarding the primary care service package;
- ▲ Approve the set of core indicators which should be monitored for PHC centers; and
- ▲ Review regional results of the QI system quarterly and provide feedback as needed.

Members

Key board members include the Director of Primary Care, the Director of Ambulatory Care, representative of the Health Insurance Institute (HII), representative of the Health Promotion Unit of the Institute of Public Health, Chief of the Statistical Office of the MOH, as well as members of the PHR*plus* staff. PHR*plus* staff members participate as observers and to provide technical assistance.

Meeting Schedule and Specific Tasks

The Central QI Board established a Regional QI Board, which includes the local MOH and HII Directors as well as the chiefs of the pilot PHC centers. The Regional Board meets monthly to provide direction to the four pilot centers regarding the development of center specific quality improvement plans, review the monthly reports of the four pilot sites, and to prepare a quarterly report for the Central QI Group.

The local MOH and HII directors receive the PHC center reports through the monthly Regional QI Board meetings. Representatives from the Regional Board attend the Central Board meetings. The role of the Central QI Board is one of providing oversight and strategic direction for PHC quality and service direction. The Board is developing a set of indicators, which will allow a comparison by region on the performance of primary care. In the future, the Central Board will be able to evaluate performance of health center and regions.

Sample QI Report

The Continuous Quality Improvement (CQI) Process at the Lapardha Health Center is under development with the support of the PHR*plus* project. This is the first formal report on the CQI activities at the Health Center. The following reports summarize the findings and actions in three areas that are important for improving quality: clinical chart audit, patient satisfaction, and the health information system.

I. Quality audit medical record

The number of audit charts= 29

Audit target =20

Summary:

The results of the medical charts technical audit are:

- ▲ The personal data of the patients were recorded.
- ▲ The reactions from medicines were recorded.
- ▲ The personal, family and social history were recorded.
- ▲ The notes in the charts were not legible and understandable.
- ▲ The notes in the charts were arranged systematically.
- ▲ The main diagnosis was written and underlined.
- ▲ The medication and doses were clearly described.
- ▲ The management plan was not written in all charts.
- ▲ There was no record of the discussion of the management plan with the patient or the result of this discussion in any of the charts reviewed.

The scores ranged from 11 to 16 points.

Observations / Interpretation of Results:

Scores from 11 to 16 were very good, especially considering the fact that the scoring sheet was being tested and under revision.

II. Patient Satisfaction Report

Lapardha Health Center January

The number of surveys = 62

The number of visit during the month = 871

% of patients who completed the surveys= 7.1%

Survey target = 10% = 87

Summary:

Most of the patients were very satisfied 31, satisfied 30, and almost satisfied 2.

- ▲ The patients requested lab analyses or echo (22), 24-hour emergency service (1), hot water in the obstetric hospital (1).
- ▲ Things that pleased the patients about their visits were: physicians were careful (35), the service was fast (24), the visits were free (13), the service was good and the problem was resolved (9).
- ▲ 14 patients were not pleased with the long waiting time in the Health Center.

Comments:

Patients may be requesting laboratory services because there used to be a lab at Lapardha, and they would rather not have to travel to Berat for lab tests. Lapardha has decided not to pursue adding a laboratory service at the present time, because of regulations regarding training of lab technician and physicians who perform lab tests.

Steps that might be followed in using the information about the patient's satisfaction in order to improve quality:

The center is taking steps to reduce waiting time by scheduling particular dates and times for the chronic patients and for those who do return for check-ups.

Steps to increase the number of patients that complete the surveys:

The center has plans to include the staff in assisting the patients to complete the patient satisfaction surveys, which should increase the number of surveys completed.

III. Health information's system report January-2004

Summary:

- ▲ The total visits increased over the past year. The number of visits in January 2003 was 298, and in January 2004 was 871.
- ▲ The total number of visits for the 13 month period (January 2003 through Jan 2004) was 8,191
- ▲ In Jan 04, the average number of visits per day was 35.
- ▲ The average number of visits per day for the 13 month period was 25 (Jan 03-Jan 04)
- ▲ The total number of referrals was 215 - 3% (Jan 03-Jan 04)
- ▲ The % of home visits over the 13 month period was 34%, which is very high compared to the other health centers.

- ▲ The reason of visits has not changed significantly over the year:
 - △ Injections made up 57% of the visits in January, and is the most common reason for visits
 - △ Acute visits made up 16%
 - △ Chronic visits made up 13%
- ▲ Diagnosis
 - △ The most common diagnosis for physician visits is cardiovascular (25%)
 - △ This diagnosis is followed by pulmonary system (23%)
- ▲ Drugs
 - △ Antibiotics comprised the highest percentage of drugs (56%)

Quality related observations

- ▲ The increased number of patients may indicate that patients are using the center rather than going to other health institutions. This number (871) may reflect improvement in quality of the services and the good performance of the clinic staff. This increase in patients is even most significant when you consider that the number of inhabitants covered by Lapardha Health Center was reduced by 2000 in October.
- ▲ The increased number of injections in January from previous months is probably explained by the seasonal illness. One concern is that in general, antibiotics and injections are used inappropriately because of patient pressure and culture.
- ▲ The high % of home visits for Lapardha shows good follow-up of care and personal involvement and commitment of the physician.

Medical Charts

REGISTRATION FORM

Name: _____ Surname: _____ Date of Birth: _____ Nationality: _____		Home Address: _____ _____ Phone:(Home) _____ Mobile: _____	
Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widow			
Members of family (Names)			
Spouse: _____ Father _____ Mother _____		Sister/s / Brother/s Child/ren _____ _____ _____	
Occupation: _____			
Work's Place _____		Social Insurance No. _____	
Contact Person in case of emergency			
Name: _____		Phone: _____	
Relation with the patient _____			

MEDICAL INFORMATION (RECORD)

Diagnosis		Allergies	
<div>_____</div> <div>_____</div> <div>_____</div> <div>_____</div> <div>_____</div> <div>_____</div> <div>_____</div>		<div>_____</div>	
Treatments		Blood Type	
<div>_____</div> <div>_____</div> <div>_____</div> <div>_____</div> <div>_____</div> <div>_____</div> <div>_____</div>		<div> <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> O </div> <div> <input type="checkbox"/> Rh negative <input type="checkbox"/> Rh positive </div> <div> <input type="checkbox"/> Don't know </div>	
		Vaccines	Vaccination Date
		Hepatitis B	
		BCG	
		DTP	
		Polio	
		FR	
		Tetanus	
		DT	

PATIENT HISTORY

*****PLEASE COMPLETE ALL THE APPROPRIATE AREAS IN THIS FORM *****

Name:		Surname:		Date of Birth:	
Medications currently used (Quantity in ml, mg, UI) – Dosage, Frequency				Allergies: Food, Medicines	
Hospitalization/ Surgical History		Date		Do you see any other doctors for medical problems? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, tell name?	
Habits Smoking		Alcohol		Immunization history	
Do you smoke: No <input type="checkbox"/> Quit when? _____ Yes <input type="checkbox"/> Packs /day? No of years _____ Want to quit? Yes <input type="checkbox"/> May be <input type="checkbox"/> No <input type="checkbox"/> Special Diet? Yes <input type="checkbox"/> No <input type="checkbox"/> Type: _____		Alcohol: No <input type="checkbox"/> Yes <input type="checkbox"/> Type _____ Amount of drinks per day: _____ Frequency per week: _____		Were you vaccinated as an infant? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> Have you had BCG vaccination? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> Have you had Hepatitis B vaccination? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know <input type="checkbox"/> When was your last Tetanus vaccine? _____	
For women only:				Do you use birth control? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date of last menstrual period: - Length of cycles - Length of Bleeding <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal Date of last PAP test? Yes <input type="checkbox"/> No <input type="checkbox"/> Date of last mammogram? Yes <input type="checkbox"/> No <input type="checkbox"/>		# of pregnancies: _____ # of children: _____ # of miscarriages _____ # of abortions: _____		If yes what kind? Are you planning pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No	

“Please indicate if you or any close relative have suffered any of disease listed below”:

	You	Children	Father	Mother	Sister	Brother	Mother's Parents	Father's Parents
Diabetes								
High Blood Pressure								
Brain Hemorrhage								
Frequent Headaches								
Eye or vision problems								
Hearing Problems								
Asthma or Chronic Bronchitis								
Thyroid Problems								
Intestinal or Stomach Problems								
Liver problems								
Rheumatism of Joints								
Anemia								
Blood circulation Disorder								
Cardio diseases								
Urinary Diseases								
(Epilepsy)								
Mental diseases or depression								
Osteoporosis								
Cancer (What type)								
Others								

(Patient Name/Surname/ Signature)

(Day / Month/ Year)

Health Center VISIT INFORMATION

Name: _____

Surname: _____

[illegible]

[illegible]

Chart Audit Forms

BASIC CHARTING TECHNIQUE AUDIT FORM

Audit date	Physician	Audit is done by:
	Health Centre	

Put a + if the answer is "YES". Live it blank if the answer is "NO"

[illegible]

Audit day	Physician	Audit done by:
	Health Centre	(signature)

Chart number		
Month:		
Year:		
Diagnose determining consultation	1	Are the CPG diagnose-determining criteria recorded?
	2	Are the Risk Factors recorded?
	3	Is the detailed chest physical examination recorded?
	4	Is the possible co-morbidity recorded?
	5	Is the diagnosis and Stage according to CPG?
	6	Are the Lab tests asked and recorded according to CPG?
	7	Are the lifestyle modification recommendations recorded?
	8	Is the recommended treatment according to the CPG?
	9	Appropriate referral: No indications to refer
		Growing child under high doses of corticosteroids
	Uncontrolled Asthma under high doses of medications	
	All asthma emergencies situations	
Max. 9 POINTS		Points;
		Month:
		Year:
The 1st Follow up consultation	1	Is the detailed description of asthma symptoms recorded?
	2	Are the recommendations for lifestyle modification followed?
	3	The patient is not collaborating?
	4	Are the medication's side effects or its tolerance recorded?
	5	Is the diagnosis and Stage according to CPG?
	6	Are the clarifications for changes in medications recorded?
	7	Is the recommended treatment according to the CPG?
	8	Appropriate referral: No indications to refer
	There is at least 1 single CPG referral criteria	
Max. 8 POINTS		Points;
		Month:
		Year:
Routine follow up consultation	1	Is the detailed description of asthma symptoms recorded?
	2	Are the recommendations for lifestyle modification followed?
	3	The patient is not collaborating?
	4	Is the diagnosis and Stage according to CPG?
	5	Is the recommended treatment according to the CPG?
	7	Appropriate referral: No indications to refer
		There is at least 1 single CPG referral criteria
Max. 7 POINTS		Points;
		Month:
		Year:
6-th month follow up consultation	1	Is the detailed description of asthma symptoms recorded?
	2	Are the recommendations for lifestyle modification followed?
	3	The patient is not collaborating?
	4	Is the diagnosis and Stage according to CPG?
	5	Are the conclusions regarding asthma control recorded?
	6	Is the recommended treatment according to the CPG?
	8	Appropriate referral: No indications to refer
		Growing child under high doses of corticosteroids
		Uncontrolled Asthma under high doses of medications
	All asthma emergencies situations	
Max. 8 POINTS		Points;

CPG – ORIENTED DIABETES MANAGEMENT AUDIT FORM

Audit day	Physician	Audit done by:
	Health Centre	(signature)

Put a **+** in the correspondent box if the answer is **YES**. Live it **blank** if the answer is **NO**.

[illegible]

CPG-ORIENTED HYPERTENSION MANAGEMENT AUDIT FORM

Audit day	Physician	Audit done by:
	Health Centre	(signature)

Put a **+** in the correspondent box if the answer is **YES**. Live it **blank** if the answer is **NO**.

[illegible]

CPG – ORIENTED LOWER RESPIRATORY TRACT INFECTION MANAGEMENT AUDIT FORM

Audit day	Physician	Audit done by:
	Health Centre	(signature)

Put a **+** in the correspondent box if the answer is **YES**. Live it **blank** if the answer is **NO**.

[illegible]

Audit day	Physician	Audit done by:
	Health Centre	(signature)

[illegible][illegible][illegible][illegible]

Patient Satisfaction Survey

Health Center: _____

Date of Visit: *Date* _____ *Month* _____ *Year:* _____

Please, select only one of the answers in the questions below, the most important one:

1. What service did you receive in the health center today?
 - ☐ Visit
 - ☐ Injection
 - ☐ Vaccination
 - ☐ Microsurgery
 - ☐ Control
 - ☐ Antenatal care
 - ☐ Other _____

2. Were you satisfied with the service?
 - ☐ Very satisfied
 - ☐ Satisfied
 - ☐ Somehow satisfied
 - ☐ I don't know
 - ☐ Somehow unsatisfied
 - ☐ Unsatisfied
 - ☐ Very unsatisfied

3. What were the things that pleased you about your visit?
 - ☐ Fast service
 - ☐ Free service
 - ☐ The service was good, the problem was resolved
 - ☐ Physician was careful
 - ☐ Medication/ prescription available

4. What were the things that did not please you about your visit?
 - ☐ Long waiting time
 - ☐ Cost too much / too expensive
 - ☐ Care was not good / my problem was not treated
 - ☐ Physician was not available
 - ☐ Medication / prescription not available
 - ☐ Other: _____

5. What additional services would you like to receive at this health center?
 - ☐ Family planning (Preservatives, contraceptives)
 - ☐ Health educations
 - ☐ Other (please specify)

4. PHC Health Information System (HIS) Toolkit

The PHC HIS is a simple Access database with user-friendly interfaces. The system is based on an encounter form completed by a primary care provider for each patient visit and produces easy-to-read monthly reports. The encounter form collects information on patient characteristics, provider, visit characteristics, diagnosis, and disposition (referrals, prescriptions, lab tests). The system has been designed to be easy to use with simple encounter forms, user-friendly data entry, unsophisticated data transfer and consolidation, and simplified routine reporting. The result is a simple, well-designed PHC HIS that is rapidly being expanded in Albania and may have applications in other country settings.

Introduction to the Albania PHC HIS	A short introduction to the development history and structure of the PHC HIS in Albania
System Orientation	A “walk-through” of the system to demonstrate its functions and uses using sample data and screen shots
Description of PHC HIS Infrastructure	A short description of the “nuts and bolts” of the system, with explanations of the technical specifications, system hierarchy, data entry, data transfer, data security, reporting, and system administration
Sample Calculation of System Requirements	Rough calculations based on population that may allow health authorities and managers to project potential costs of implementing the PHC HIS in their region
Encounter Form and List of Procedure Codes	The form used by PHC providers to record each patient encounter for entry into the system
Procedures for Completing the Encounter Form	A simple explanation for PHC providers to guide them through completing the encounter form, including reference material on coding
Procedure for Data Entry	A simple explanation for data entry personnel on creating “batches” of entries, entering encounter form data in batches into the system using a numeric keypad, and double entry procedures to ensure accuracy
Sample Reports	A routine set of monthly reports that can be automatically generated by the system

Introduction to the Albania PHC HIS

Improving Collection and Use of Basic Health Information

The Albanian primary health care (PHC) health information system (HIS) was designed to inform and support interventions aimed at improving the quality of care and efficiency of PHC in Albania, beginning in four facilities in the Berat Region. Ministry of Health (MOH) information system channels collected a large amount of data that was aggregated in Tirana, but was rarely analyzed or used for health system planning or quality assurance. Regional, district, and facility level users did not receive feedback from central levels after analysis. Health departments did not have adequate capacity to analyze or use health information for informed planning or decision making, or to monitor quality of care. Thus, limited and unreliable health information and medical statistics in Albania impeded the provision of higher quality and more continuous patient care.

A PHC HIS was designed and introduced by the *PHRplus* Project in July 2002 to help facility, district, and regional managers to collect, analyze, and feed back the data necessary to make more informed clinical and managerial decisions. The Albania project began by adapting health information system tools developed and tested by *PHRplus* in Egypt. The adapted system initially introduced in four pilot health centers in Berat Region was based on a simple one-page encounter form that captured data on every patient visit. The system was designed to use a scannable patient encounter form. The encounter form included patient characteristics (name, age, sex, insurance status), provider (doctor ID, nurse ID), visit characteristics (first visit or repeat, reason for visit, length of visit), diagnosis group, and disposition (referrals, prescriptions, lab tests). Equipment needed to support the HIS included a computer network, scanner, and printer.

The PHC HIS proved effective in the initial four pilot sites, producing routine reports and disseminating them to target user groups to contribute to improved planning and monitoring. From July 2002 to May 2004, over 90,000 encounters were collected and analyzed. Routine reports by facility and by physician were generated monthly, and analyzed as part of the quality improvement activities in each health center.

Streamlining the PHC HIS for Roll Out

In April 2004, the local government asked for technical assistance from *PHRplus* to implement a similar system in all the urban centers in the Berat and Kuçova districts of Berat Region. *PHRplus* took the opportunity to improve the system before rolling it out. The project invited all stakeholders to participate in discussions about reforming the system to be more effective in the Albanian context, including staff of the pilot health centers, the statistical department of the Ministry of Health (MOH), head of the reproductive health section of the MOH, head of ambulatory care of the MOH, Director of Information Technology at the Health Insurance Institute (HII), the Institute of Public Health, and the Director of Primary Care of the MOH. The stakeholders, alongside *PHRplus* management and HIS experts, agreed to streamline the HIS based on the following principles:

- ▲ Use a simple encounter form.
- ▲ Capture essential PHC data to monitor PHC services.
- ▲ Use a manual data entry process that requires the use of only a numeric keypad.
- ▲ Require a double entry process to ensure the accuracy of a manual data entry method.
- ▲ Ensure that the HIS is user friendly, requiring minimal technical skill to operate and maintain.
- ▲ Design the HIS to work reliably without the need for technical intervention.
- ▲ Focus the structure of the HIS around individual machines rather than through a network.
- ▲ Produce a basic set of reports that can be quickly generated in a user-friendly manner and at the lowest level possible.
- ▲ Design the system around the use of floppy disks for transferring data from each data entry computer “up the chain” to the central database to avoid relying on computer networks, dial up internet and e-mail connections, websites, handheld computers, etc.
- ▲ Design the system to handle electricity disruption without significant data loss.

As a result of the improvements, the revised encounter form (see Attachment 5) is shorter and easier for doctors and nurses to complete. Information about the trimester of pregnancy and breastfeeding is included, which makes it possible to produce three routine MOH reports, thus eliminating paperwork. Two important changes make the HIS data more compatible with HII reports and procedures. The first is the addition of the HII unique patient code, which will allow information to be analyzed by patient, rather than just by visit or encounter. The second modification is the use of the same standard diagnosis codes that have been introduced by HII over the past six months (using standard ICD-9 codes).

The new form also includes a procedure code section, which provides a way to track activities and procedures, such as injections, immunizations, and wound care. Procedures can be very detailed, depending on the expected use of the information. For example, nurses enter a code for each type of immunization, providing a way to track this information. In addition, a cost can be assigned to each procedure, which will allow for analysis of PHC costs in the future.

Evaluating the Improved PHC HIS

The newly redesigned HIS was tested in April 2004. After some quick training on the new system, the four original health centers began officially using the redesigned HIS in May 2004, with additional health centers in urban areas throughout the region added in phases. In August 2004, 18 health centers (46 physicians, 97 nurses) provided complete data for analysis at the health center, district, and regional levels. Four months of user experience indicates that:

- ▲ Costs for encounter forms have been cut in half
- ▲ Encounter forms are now completed in a third of the original time
- ▲ Data entry time has been cut by 40%
- ▲ Routine monthly reports are generated in less than five working days after month's end

The system is now quickly spreading to the Skrapar district and to rural clinics throughout the Berat Region and is run completely by Albanians. Local health authorities are providing financial resources to print encounter forms and are providing staff for data entry.

Creating Ownership for the PHC HIS in Albania

Based on PHR*plus* experience to date, the prospects that the PHC HIS can be replicated throughout the entire country is very high. The system yields consistent data on PHC practices, at least at a basic level. The system infrastructure is well developed and flexible, does not require sophisticated technology, and ensures operation and back up given inconsistent electricity. The procedure/special codes section of the encounter form allows the system to collect additional information without changes to the computer program or encounter form. For example, currently laboratory services are not coded in the system, but with the addition of centers offering lab services we plan to add codes to capture these procedures. Further work with the MOH, HII, local authorities, and individual physicians and nurses is needed to identify how the HIS can best provide them with useful information and reports.

The robust work to adapt the system to country-specific conditions described above has suddenly made local ownership the system's strongest point. After a presentation to the Deputy Minister of Health and other key stakeholders in mid-September, the central government is evaluating the system for scale-up throughout the country. The Deputy Minister affirmed that the system is excellent, practical, concrete, and suitable to the Albanian context. He further emphasized that the PHC HIS will not only improve monitoring of PHC at local levels, but will also provide evidence for strategic and budget planning in the MOH. He stated that he personally supports the roll out of the system throughout Albania, not only as the Deputy Minister, but also as an expert in information services.

Next Steps and Recommendations

The next step for the PHC HIS is to hold a workshop in Berat Region to demonstrate the system to representatives from other districts and regions. PHR*plus* also recommends establishing a technical group at the central level to decide on a basic data set required by PHC facilities. Based on the data requirements, the existing encounter form and list of procedure/special codes can be updated to ensure required data are captured. A second step would be to decide on clinical standards and related indicators to be monitored to track improvements to PHC quality of care over time. As mentioned above, further work with "data user groups" (MOH, HII, local authorities and health sector managers, and individual physicians and nurses) is needed to develop useful reports. Continued discussions will take place to provide concrete examples of uses of the information including comparing compliance to standards (e.g., minimum number of visits by physician, percentage of women having a prenatal visit during their first trimester of pregnancy, average number of well baby visits during the first year) and to monitor trends (e.g., percent of babies who are exclusively breastfed during the first six months, cases of chronic diseases seen by doctor, by health center, and within the region).

It is often tempting to design an HIS using the most advanced technology and thinking. The PHR*plus* HIS has been successfully implemented by keeping things simple and testing processes to ensure feasibility – collecting only data that will be used for quality monitoring and decision-making, developing easy systems for data collection, entry, analysis, and reporting, and using an appropriate level of technology.

System Orientation

Welcome to a demonstration of the Albanian Primary Care Health Information System. This demonstration includes instructions about the Installation, Data Entry and Report Generation.

Installation

If you already have the PHC HIS on your computer, double click on the HIS.exe on your desktop.

If you have a demonstration CD, insert it in your machine to install it. The demonstration may automatically ask if you want to install the demo. If it does not, double click the HISinstallDemo file to install.

The PHC HIS requires a computer minimum screen area of 1024 by 768 pixels. Some users may need to reset their computer screen area as following: Right click on the computer screen. Select the “Active Desktop” and then “Customize My Desktop”. You will see the Display Property screen. Go to the “Settings” tab and change the “Screen Area” into 1024 by 768 pixels or higher.

Data Entry

Click on the HIS icon on your desktop, which opens an Access Program. You come to the main screen (HIS Data Entry Screen). You may need to select “English” in the upper left-hand corner.

HIS Data Entry - []

Reports Manager Transfers Documents Demo

[Shqip](#)

Main Menu
HIS Demonstration System

Forms Entered Today: 0
Forms Entered Yesterday: 0

My Responsibilities

Facilities:
4 Shtatori
Allambrez 1
Allambrez 2

Districts:
Fier
Mallakaster

Regions:
Berat
Fier

☒ Country System

Create Batches Enter Pass 1 Enter Pass 2

HIS Messages:
New Translations Needed

Open

Exit

Form View

From this screen you can create a batch by clicking “Create Batches”. Batches are groups of completed encounter forms. Normally forms are “batched” to speed up data entry for visits that occur at the same health center, same physician and/or nurse, same visit date. A batch has been created for your convenience.

From the main or data entry screen, encounter forms are entered (pass 1) by selecting your batch and then re-entered (pass 2). A sample completed encounter form:

Data entry screen is shown below. To practice entering data a user must be selected. To move from field to field hit enter.

HIS Data Entry - []

[Shoqitare](#)

Encounter Form Entry - Pass 1

Today: 0
Yesterday: 0

User: Batch Record: 1

Batch: # 1609

Form #: <input type="text" value="67"/>	Married: <input type="text" value="1"/>	
District: <input type="text" value="2"/>	Home Visit: <input type="text" value="2"/>	
Facility: <input type="text" value="7"/>	Referral: <input type="text" value="2"/>	
Registry: <input type="text" value="1"/>	Diagnosis 1: <input type="text" value="401"/>	Blank will go to Procedure 1
Physician: <input type="text" value="0210013"/>	Diagnosis 2: <input type="text"/>	
Nurse: <input type="text" value="091"/>	Diagnosis 3: <input type="text"/>	
Visit Date: <input type="text" value="090904"/>	Procedure 1: <input type="text"/>	Blank will go to Next Form
Patient ID: <input type="text" value="6324871131"/>	Procedure 2: <input type="text"/>	
Birth Date: <input type="text" value="090451"/>	Procedure 3: <input type="text"/>	
Visit Type: <input type="text" value="1"/>	Procedure 4: <input type="text"/>	
Sex: <input type="text" value="2"/>	Procedure 5: <input type="text"/>	
Insured: <input type="text" value="1"/>	Procedure 6: <input type="text"/>	

Esc = Clear Current Record
Minus = Backup to previous field

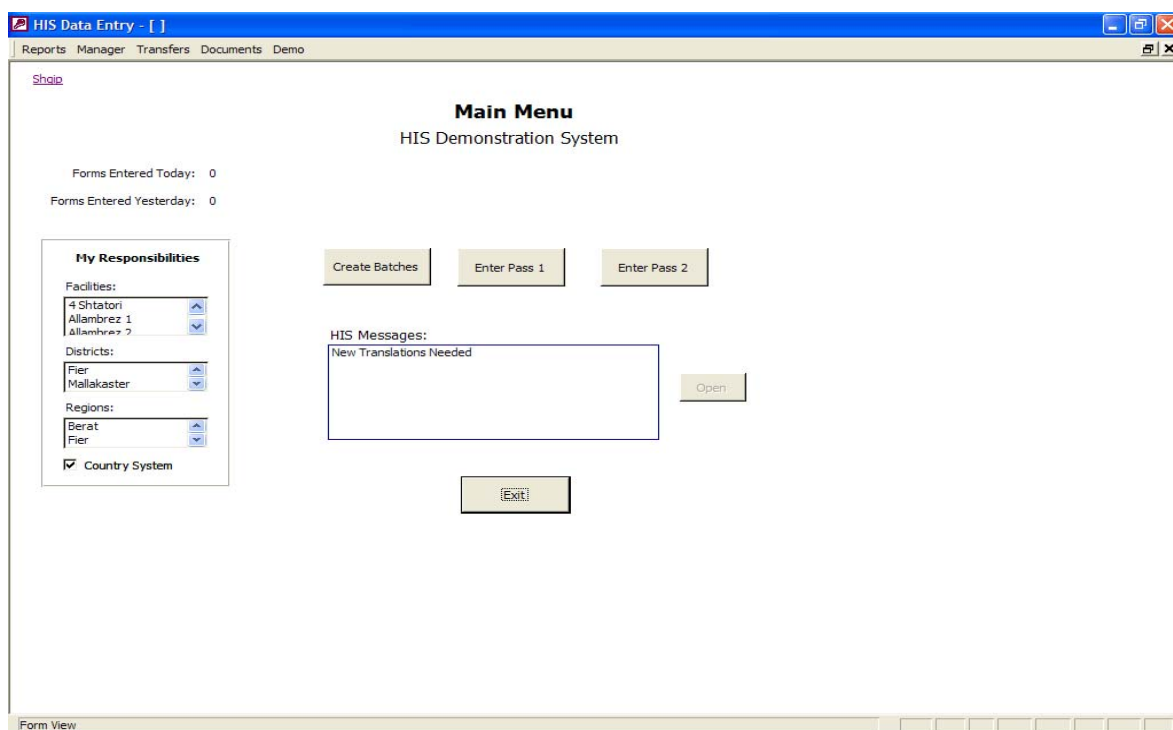
Form Version 3

Ready NUM

Click “Next Form” and the “Cancel Batch” to get back to the Data Entry Screen.

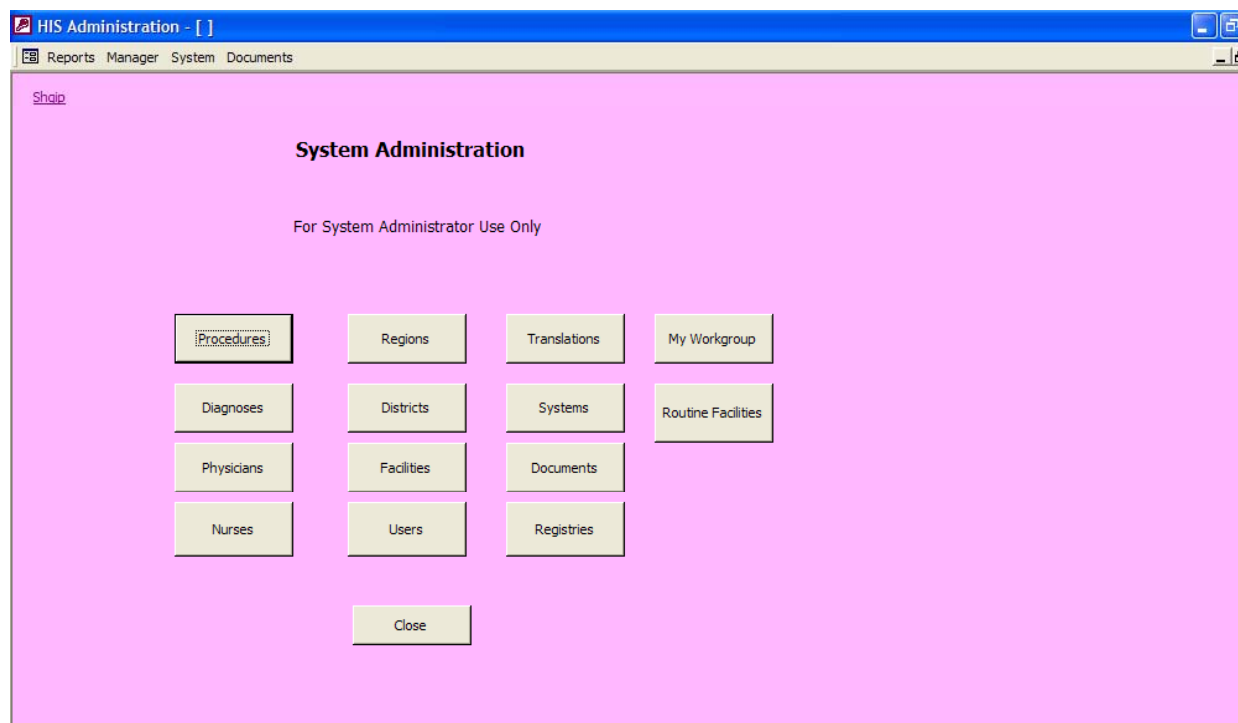
The toolbar at the top of the screen includes: Reports, Manager, Transfers, Documents, Demo.

“Reports” found here are for the data entry person, and are not available in the demo.



Report Generation

From the main (data entry) menu bar, select “Manager” and then “System Administration” to get the following HIS administration screen:



From the HIS Administration screen you can access the tables used by the system. From here you can add or modify system data, such as adding new physicians or facilities, procedures codes, etc.

For example, if you click on “Procedures” and check numeric order, you will see:

Shqip

Procedures

Procedure: ☒ Numeric Order

Procedure ID:

Procedure Type:

Description - English:

Description - Local:

Active: ☒

Close “Procedures” to get back to the HIS Administration Screen. On the HIS Administration Screen toolbar click “Reports”. This set of reports includes reports used to monitor and manage the data entry and system maintenance. Examples are shown on the following pages.

HIS Administration - []

Reports Manager System Documents

Productivity
Rejected Forms Listing
Procedure Codes
Diagnosis Codes
HIS Codes for a Facility
End of Month
HIS Reports

System Administration

For System Administrator Use Only

Form View

start

Inbox - Micros... Booklet for Dis... System Walk T... HIS Administra... 14:38

For example, if you select “report”, then “end of month” then “facility” then “Muzakaj” then “August” ... :

End of Month Reports

Report Level:

☐ System
☐ Regional
☐ District
☒ Facility
☐ Physician

Select Facility:

Muzakaj

☐ Include Physicians Reports

Select Month:

August, 2004

Open Close

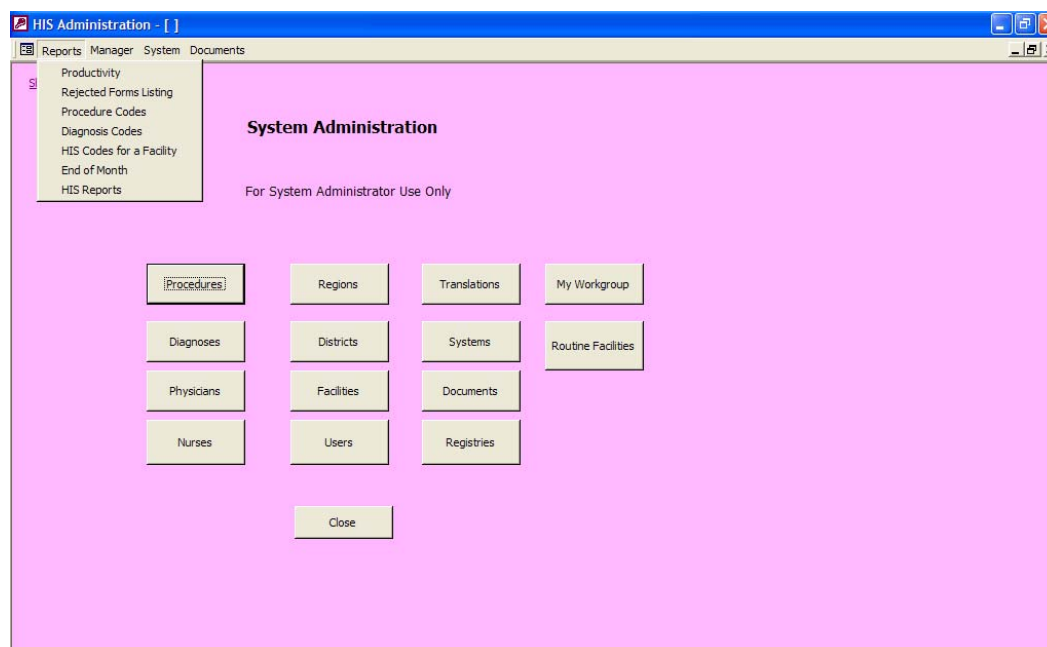
... You will see a series of reports for the Muzakaj Health Center, including one of the number of visits by each physician:

	August 2003	September 2003	October 2003	November 2003	December 2003	January 2004	February 2004	March 2004	April 2004	May 2004	June 2004	July 2004	August 2004	Last 12 Months
Muzakaj														
Adelina Ndini	92	116	125	136	168	187	182	166	225	139	131	158	161	1,894
Donika Papa	192	142	179	125	251	193	180	180	209	210	154	126	155	2,104
Hortensia Kok	257		185	315	298	323	367	286	292	386	297	272	391	3,412
Margarita Xhe	278	3	326	364	401	389	376	422	408	462	424	417	156	4,148
Shpetim Ziu	119	525	224	217	286	287	301	245	332	287	267	174	231	3,376

If you select “Report”, then “End of Month” then “District” then “Kucova” then “August”, one of the reports you will see (after closing others that come first) is the rejected forms summary. This report shows how many forms were rejected and sent back for completion to each center, how many have been corrected and returned, and the % of rejects and the % of returns:

Rejected Forms Summary					
Forms rejected this Month compared to visits and returns					
	Visits	Rejects	Returns	Reject %	Return %
11 Janari	966	26	6	2.7%	23.1%
Havaleas	684	18	11	2.6%	61.1%
Kucova Womens	186	4	4	2.2%	100.0%
Liukan Prifti	1941	57	36	2.9%	63.2%
Tafil Skendo	1025	19	7	1.9%	36.8%

The last category found under “Reports” on the HIS Administration toolbar is HIS Reports”. Clicking “HIS Reports” opens a new program that contains the reports specifically designed for the PHR_{plus} Project by Dr. Altin Azisllari. Examples are given on the following pages.



The main screen of the reports program is below. Note that on the left side you see “Snapshots Only”. Here you can access “snapshots” or pictures of reports opened and saved previously. On the right side of the screen you can run reports normally.

HIS Reports - []

Shqip

HIS Reports Main Screen

Snapshots Only :

☐ Monthly Reports

☒ Periodic Reports

Region

District

Facility

Physician

Nurse

Regular Reports >>

Close

Form View NUM

So if you click “Regular Reports” then “Periodic Reports” then “Facility” then “Llukan Prifti” then “Continue>>” ...

Shqip

REPORT SELECTION MENU

Report Type :

☐ Monthly Reports

☒ Periodic Reports

Report Level :

☐ Regional

☐ District

☒ Facility

☐ Physician

☐ Nurse

Please select a Facility from the list below :

Llukan Prifti

<< Close Continue >>

... and choose “Set a period of your choice” and “Use the Month as criteria” and select the report period:

[Shqip](#)

REPORT SELECTION MENU

Facility : Llukan Prifti

Step 1 : Select Report's Period Type

- ☐ Select a pre-set period
- ☒ Set a period of your choice

Step 2 : Select Report's criteria for the period of your choice

- ☒ Use the Month as criteria
- ☐ Use the Date as criteria

Step 3 : Select Report's Start and End Month

Report's Start Month

Report's End Month

When you select “Continue>>”, you can select from a number of reports. The one selected here is “Frequency of Diagnosis”:

[Shqip](#)

PERIODIC REPORTS ☐ Take Snapshots

Facility : Llukan Prifti **January 2004 - June 2004**

- ☐ Visit Data
- ☐ Frequency of Diagnoses By Class (Chart)
- ☐ Frequency of Diagnoses By Class (Table)
- ☒ Frequency of Diagnoses
- ☐ Frequency of Procedures By Type (Chart)
- ☐ Frequency of Procedures By Type (Table)
- ☐ Frequency of Procedures
- ☐ Immunization Data
- ☐ Mirror 5/Sh
- ☐ Mirror 8/Sh
- ☐ Mirror 10/Sh

The first section of the “Frequency of Diagnoses” Report is shown below:

- PERIODIC REPORTS -
- FREQUENCY OF DIAGNOSES -

Facility : Llukan Prifti

June 2004 - August 2004

CLASS	CODE	DIAGNOSE	VISITS	CASES
VII	401	Essential hypertension	1630	808
III	250	Diabetes mellitus	334	187
VIII	466	Acute bronchitis and bronchiolitis	209	191
VIII	463	Acute tonsillitis	145	137
VIII	493	Asthma	142	81
IX	532	Duodenal ulcer	122	81
XIII	721	Spondylosis and allied disorders	75	68
IX	555	Regional enteritis	73	68
VI	345	Epilepsy	70	32
V	295	Schizophrenic disorders	69	31
XII	692	Contact dermatitis and other eczema	67	63
VIII	464	Acute laryngitis and tracheitis	61	58
VIII	490	Bronchitis, not specified as acute or chronic	60	54

Return to the HIS reports menu to continue viewing reports. Keep in mind that the reports are under development. Requests by users at the facility, district, region, and country levels will determine the reports to be programmed. In general, reports will be used to monitor trends, such as the % of babies who are exclusively breastfed during the first six months, or the number of patients with diabetes followed by a specific physician or health center.

Description of PHC HIS Infrastructure

The Information System Infrastructure (ISI) was developed in the process of creating the Primary Care Health Information System for the PHR*plus* project in Albania. The ISI is a generic database management structure that is particularly useful in situations where:

- ▲ There are numerous data-gathering sites that are geographically dispersed
- ▲ Data need to be accumulated and reportable as they move up the data management hierarchy (for example from Site to Community to District to Region to Country levels)
- ▲ The use of technology must be limited to the lower end of the development spectrum

While the ISI was developed for a health information project, its use is not limited to this purpose. Throughout this description we will use examples from the PHR*plus* Primary Care Health Information System to add clarity. However, with proper modification the ISI can support most any type of information system project.

Technical Specifications

The ISI consists of two MS Access database files that contain the ISI forms, queries, and reports. These two files are designed to be limited in size so that any modified versions can be distributed to all computers in a project's system via a 1.44 mb floppy disk. A third MS Access database contains all of the data tables required by the ISI and the specific information system project. In addition to these MS Access database files the ISI uses several Visual Basic executable programs. The ISI depends on the availability of other Microsoft Office applications (Word, Excel, PowerPoint) for exporting data, reports, and documents designed for users. The following specifications are minimums for any computer that would be used in a project's information system that uses the ISI:

- ▲ Windows 97 or higher
- ▲ 500 mb available hard drive space
- ▲ Floppy Disk Drive
- ▲ Keyboard with Keypad or a separate Keypad for all machines to be used for data entry
- ▲ MS Office Professional 2000 or higher (must include MS Access and PowerPoint)
- ▲ Sufficient machine speed and RAM to operate MS Office applications in a usable manner

Data Access Nodes

In this description of the ISI we will use the term Data Access Nodes (DAN) to refer to any computer in the project system that will be used to enter data, report on data and/or perform any of the administrative functions required by the ISI. Actually, a DAN can be either an individual computer (desktop or laptop) or a Local Area Network (LAN) with data maintained on a server that can be accessed by multiple computers. In the case of a LAN, this is considered to be one Data Access Node within the ISI hierarchy. Depending on the size of an information project there are likely to be many

DANs. Most, particularly at the lower levels of the hierarchy, will be individual computers. Possibly, depending on the technical sophistication of the project environment, one or more of the higher-level DANs might be a LAN.

Hierarchy of Data Access Nodes

DANs are organized in a strict Mother-Child hierarchy that might look like this:

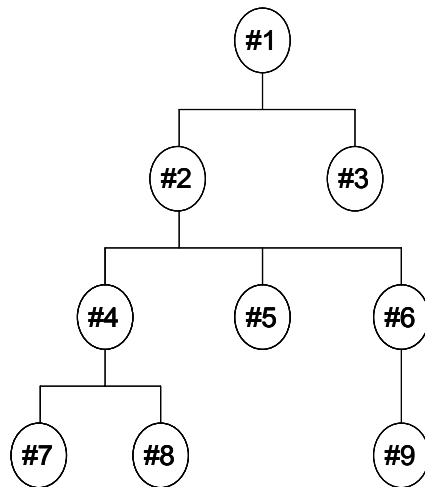


Figure 1

The significance of this hierarchy is twofold. First it controls the transfer of data throughout the system; both UP the hierarchy and DOWN the hierarchy (see Data Transfer Process for more description of this process). Second, it defines the locus of responsibility for the accumulation of data, primarily for the purpose of report generation. For example, DAN #4 will maintain all data that is entered at DAN #7 and DAN #8 as well as data entered at DAN #4. This allows DAN #4 to be able to generate reports on the combined data from DAN #4, #7 and #8.

This makes more sense when the hierarchy of the DANs is matched with a project's specific hierarchy for data gathering and reporting responsibilities. For example, the hierarchy of the PHR_{plus} Primary Health Information System Project looks like this:

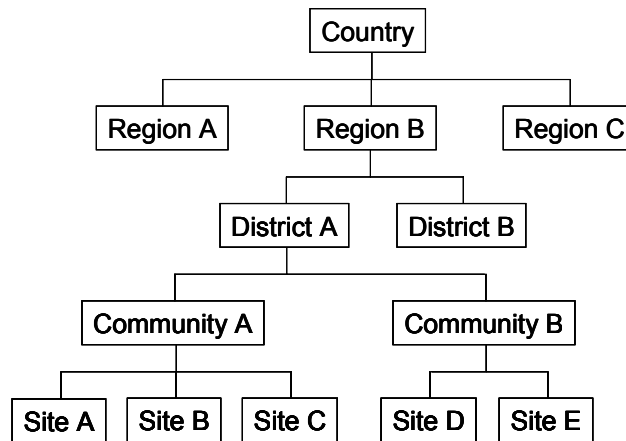


Figure 2

Data on patient encounters are gathered at various health centers or health posts (Sites) throughout the country. For data reporting and data analysis purposes it is desirable to be able to access the data for a specific Site, then for all of the Sites in a particular Community (when there are multiple Sites in a Community), then for all of the Sites in a District, then for all of the Sites in a Region and finally for all of the Sites in the Country.

Based on geographic and other operational considerations, the Project's data responsibility hierarchy is then matched to the ISI hierarchy for DANs to produce a combined hierarchy that might look like this:

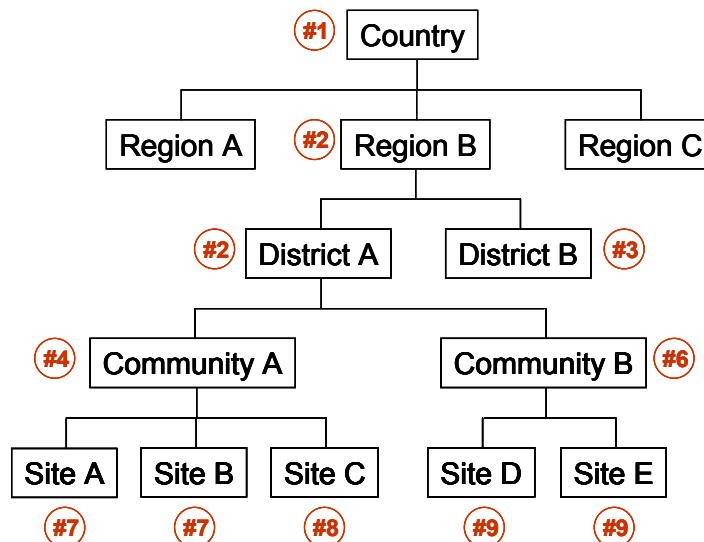


Figure 3

In this situation, data from Site C is entered into a computer identified as DAN #8. As soon as all the data for a particular month have been entered, for example, it is possible for DAN #8 to generate reports on the activity at Site C. The data gathered by DAN #8 are periodically transferred to the computer DAN #4. The data for Site A and Site B, entered into DAN #7 is also transferred to DAN #4. This makes it possible for DAN #4 to generate reports on all of the Sites in Community A. And so on up the chain. At the top level, the Country level in this example, it will be possible to analyze data and generate reports for all sites in the system, by Region, by District, by Community.

One of the primary jobs of the ISI is to manage this relationship of DANs and its data transfer processes in a user friendly fashion so that, once the basic structure has been set up, the users of the system can add Computers, Sites, Communities, etc, and can change the structure of responsibilities of the DANs to match the changing realities of their particular information system project.

Data Entry

Another primary responsibility of the ISI is to provide for an efficient, user-friendly data entry process that can be implemented in an environment that is not yet ready for a very technologically sophisticated information system. The ISI is designed around a data entry process using a paper data gathering form that is designed to be easily and quickly completed by those responsible for this step. Completed forms are batched together and entered manually, with each batch entered twice (double entry) to maximize accuracy. The ISI data entry process has been designed to function completely by using only the keys on the number pad section of the keyboard, assuming the data are restricted to numeric values only. In most situations where computer technology is not commonplace, it is likely to be difficult to find data entry personnel who can touch-type. By limiting data entry to just the number pad, it is possible to train data entry personnel to a highly proficient level quite quickly.

A considerable amount of error checking can be built in to the data entry process in order to ensure that the data is valid and logical. For example, in the *PHRplus* PHC HIS, data are checked at time of data entry to see that the patient's date of birth is not after the date of visit, or that prenatal care visits don't occur with male patients, etc. When these situations are encountered, the ISI includes a feature for rejecting forms and tracking the return of corrected forms. Forms are also rejected when key data are missing.

Data Transfer Process

Data that are entered into one DAN will need to be transferred "up the chain" of the Mother-Child hierarchy in order to ensure that each DAN in the hierarchy has the data available to generate reports based on its responsibility within the Project hierarchy. The most important data that are transferred UP the Mother-Child chain, of course, are the Project data. In the example of the *PHRplus* PHC HIS, these are the data on the visit encounters that occur in each health center. Other data important to the ISI functions that are transferred up include data entry productivity data, form rejection data, system management data, and data on any ISI errors or reportable occurrences.

The transfer data are created by the Child DAN onto a floppy disk. The disk is carried to the Mother DAN and received. Receipt of the transfer data is documented by the Mother DAN and put on the floppy disk, which is then taken back to the Child DAN for confirmation. Until the Child DAN receives confirmation that the data have been received by the Mother DAN, it will continue to indicate that there are data ready for transfer. This approach ensures that no data are lost in the transfer process.

There is also an important element of the transfer process that requires data to go DOWN the Mother-Child chain. Primarily this need occurs when there changes to one of the Project data tables that are critical to the data entry or report-generating features. For example, in the PHR*plus* Project, this occurs when new physicians are added, new health centers are added, procedure codes or diagnosis codes are added or deleted, etc. Changes such as this typically are made on the top DAN and then need to be sent down the chain to all other DANs in the system. Transfers by a Mother DAN down the chain to its children DANs are usually going to become part of a transfer that is initiated because of the need to document the receipt of Project data being sent up the chain to the Mother by a Child. Documentation of the receipt of a downward transfer will usually not go back up to the Mother DAN until the Child DAN has its next need to transfer Project data UP to the Mother.

This ISI manages these transfers in a manner that is intended to minimize the need to make physical transfers of data from machine to machine while at the same time ensuring that all necessary transfers are properly confirmed. All transfer data are converted to sequential, comma delimited text files so that the file sizes are kept small. All transfers are structured to be no greater than 1.2 mb to ensure that they will fit on a floppy disk.

Basic Reporting

The ISI contains a basic set of reports that are intended to provide information necessary to monitor the functioning of the system. Any specific project will undoubtedly have many reports developed to make use of the Project data. These Project-specific reports are actually contained in a separate Access database and not considered to be part of the ISI. The ISI reports include:

- ▲ Forms entered by source (for example: by center, by physician, by nurse)
- ▲ Productivity of data entry personnel
- ▲ Data entry error rates
- ▲ Rejected forms rates and return rates

These reports are available on each DAN consistent with the defined Project responsibilities of that DAN. For example, a DAN that is responsible for one or more Sites can generate the above reports for those Sites. If a DAN is responsible for a particular District then it can generate the above reports for the District as a whole and for all sites within that District. A DAN that is responsible for a Region can generate reports for that Region, all Districts in that Region and all Sites within that Region.

This ISI provides for recording the name of the specific individual at each level of Project responsibility who is the Administrative Contact. The basic ISI reports are expected to be printed monthly and are labeled specifically to the attention of the Administrative Contact.

Data Security

Data security concerns have two main sources. First, it is possible that data in the Project data file can become corrupted as a result of power failures, inappropriate machine shut downs, bad hard disk sectors, or other reasons. The ISI has been programmed in a manner to minimize the exposure of the Project data to corruption, but it can still happen. The easiest way to recover from this type of situation, is to restore the Project data from a back-up copy.

On each DAN, when the main ISI application mdb is closed, a back-up copy of all Project data is automatically made on the hard drive of that machine. Backups are kept separate for Monday, Tuesday, Wednesday, and Thursday. Backups made on Friday are kept separate for the 1st Friday of the month, 2nd Friday of the month, 3rd Friday of the month, 4th Friday of the month, 5th Friday of the month. In the event of any data corruption or other data anomaly it is possible to restore the Project data to a point prior to the problem easily.

The second source of data security concern is an unrecoverable loss of the hard drive on a DAN. In situations where the electricity supply is unpredictable and/or of poor quality there is an increased possibility of this happening. If this occurs, all of the Project data and all backups of the Project data on that DAN are lost. Fortunately, the design of the ISI is such that a copy of all of the critical Project data for each DAN is available on its Mother DAN up to the point of the last data transfer. The ISI provides for the mechanism to rebuild the entire Project application on any DAN should this type of situation occur. Unfortunately, though, all data entered after the last transfer to the Mother DAN will not be recoverable. For this reason (and others) it is wise to have a Project policy of frequent data transfers. The *PHRplus* project expects data transfers to be done twice a week, on Mondays and Wednesdays.

The protection of last resort to recover any Project data that is lost after a recovery from a backup or from a rebuild is to reenter the data from the original data entry forms. The recommended procedure for handling data entry forms at each DAN is to keep the entered forms/batches for the current month separate from those of the prior month. Doing this makes it relatively easy to identify the forms/batches that are no longer in the Project data after a recovery/rebuild situation.

A unique situation exists with the DAN that is at the top of the hierarchy. This machine does not have a Mother from which it would be possible to rebuild if needed. For this DAN it is important to have a process of making an off-machine copy of the Project data. If this top DAN is an LAN situation then the ISI provides for the automatic backup of the Project data to one or more of the user machines in the LAN. This backup process works the same way as described above for the on-machine backup described for each DAN.

User-Friendly Design

All user interfaces in the ISI are through tightly controlled Access forms which provide the user with obvious or clear on-form directions. There is a liberal use of pop-up messages to inform the user of any unacceptable or off-standard situations that might occur. All forms, messages and reports are available to the user either in English or the local language. The ISI uses one single translation table that makes it easy to set up the ISI for any local language.

Ideally, the ISI would anticipate every possible error situation that might occur and either self-correct the situation or inform the user of the corrective action needed. At this point in the design of the ISI that is very close to true...but not 100%. The ISI programming traps every unanticipated error situation and handles it in a manner that is the least disruptive to the user. Typically this will involve an orderly closing of the application with an instruction to the user to reopen it. During this process the operational version of the ISI will be replaced with the secure master version and all links to the Project data will be refreshed. This will invariably return the user to a functional situation. If this occurred during the entry of a batch of forms, the batch will need to be re-entered. Information related to all unanticipated errors is logged and sent up the chain to the top DAN where it can be analyzed to identify any programming logic problem that needs to be fixed to prevent the error from occurring again.

Following a power failure, a situation can often result that locks a user out of a database application. The ISI detects this situation and corrects it automatically.

Project Documents

The ISI includes a feature that allows for any Microsoft Office document (Word, Excel, PowerPoint) to be maintained as a formal Project document. Whenever such a Project document is modified, the new version is sent down through the transfer process to all DANs in the system. This makes it possible for every DAN to always have immediate access to the latest version of a Project document. The ISI protects the Project documents from any accidental changes that might occur, restoring the document to its original state after each use. Examples of Project documents from the PHR*plus* Project include:

- ▲ Procedure for completing an encounter form
- ▲ Data entry procedure
- ▲ Batch slips
- ▲ Encounter form

System Administration

There are a number of system administration functions that need to be performed, usually on the top DAN, that are an integral part of the ISI although most need to be modified to fit the needs of a specific Project. These System Administration functions are contained in a separate application named HIS_MGT.mdb and is identified within the ISI as the System Administration function. It is accessed from the main ISI application (which is named HIS_DE.mdb).

One of the primary functions of this area of the ISI is to give the Project system administration users the ability to maintain the Project data tables in a user-friendly way and to then control the distribution of any changed Project data tables down to all other DANs in the system. In the PHR*plus* Project, for example, there are Project data tables for Regions, Districts, Facilities, Physicians, Nurses, Procedure Codes, Diagnosis Codes, and Registries. It is necessary from time to time for new records to be added to these tables, modified, inactivated, or deleted.

Other ISI system administration functions include a need from time to time to add new DANs to the system or to change the responsibilities of a DAN, to make language translations from English to the local language, create a demonstration copy of the Project system, modify Project documents, and review any unanticipated errors that may have occurred at any DAN. All of these functions are provided for in the System Administration area of the ISI.

Here also is the menu item link to the Project-specific reports application. This mdb application contains the reports that have been created to display and analyze the Project data.

The Helper Feature

Although the responsibility for data entry for a particular site (a health center in the PHR*plus* Project example) can be fixed to only one DAN in the system, it is possible for any DAN to help out another DAN by entering data related to that site. The need for this occurs commonly when a particular DAN gets backlogged with data entry forms and needs help to get all the data entered by the end of the month. Or a hardware problem might put a particular DAN out of action for a period of time and the easiest way to adjust is to temporarily have its data entered at a different DAN. A Project system might in fact have one or more computers set up as nothing but helper DANs with no defined responsibility of

their own. They just help out with the data entry process for any DAN in the system that might need help at that time.

In the event that a DAN enters data for a site for which it is not responsible, the ISI will require that that data first be transferred to the responsible DAN before it is then transferred up the Mother-Child hierarchy. To illustrate, referring to Figure 3, if DAN #9 enters data for Site C then it will need to transfer that data to DAN #8 before the data are then transferred up the Mother-Child hierarchy to DAN #4. Because of this design of the ISI, DAN #8 will be assured of having all the data related to Site C and it will be able to therefore fulfill its responsibility to report on data for Site C. The data for Site C that was entered on DAN #9 will not be transferred up to DAN #6.

Auditing and Monitoring

Note: At the time of this writing, the ISI auditing and monitoring features are still under development and not fully implemented. Additional system features to be added include:

- ▲ Auditing a random selection of data entry records against a primary data source document for confirmation, if such a source exists in a particular project. In the *PHRplus* there is a Registry document that can be used for this auditing purpose.
- ▲ Conducting a third-party audit of the data entry for randomly selected batches of data entry forms.
- ▲ Monitoring the frequency of data transfers to ensure that transfers actually happen in a timely manner for data security purposes.
- ▲ Monitoring the printing of the basic monthly reports to ensure that data is communicated in a timely manner to all levels within the Project.
- ▲ Monitoring of the backup function at each DAN.

The auditing and monitoring features will include an alert message at the appropriate system level to any off-standard situations detected as well as a system report for each audit/monitoring area.

Functional Limits

The functional limits of the ISI design will depend a bit on the actual amount of Project data that is to be gathered by the system. For the *PHRplus* Project the following are considered to be functional limits at this time:

- ▲ A single computer (DAN) with a well-trained data entry user can accomplish the complete data entry process for 600 forms/visits in an eight-hour day or approximately 12,000 forms/visits per month. This assumes a full eight hours of machine operation per day.
- ▲ A single computer (DAN) should not be expected to maintain more than 3,000,000 project data records. This should keep the size of the Project database, well below the maximum size level of 1 gigabyte and should make it possible to fit the copy of the complete system on a 700mb CD without extraordinary measures.
- ▲ There can only be six levels in the Mother-Child hierarchy. The ISI can be modified to extend this limit but there are other practical reasons to keep this level as low as possible.
- ▲ There is no limit to the number of DANs that can exist in the Project system.

Sample Calculation of System Requirements

The resources listed below are needed for a region the size of Berat (estimated population of 192,000 with 384,000 visits per year).

Equipment

- ▲ 6 computers w MS Office Professional Software and HIS Software
- ▲ 6 workspaces with desk, chair, etc.
- ▲ 3 electrical support systems, including inverters and surge protectors
- ▲ 3 printers for printing reports once a month

Supplies

- ▲ 384,000 encounter forms printed per year
- ▲ 3-6 consecutive number stamps
- ▲ 1000 folders, used to collect encounter forms from individual physicians and nurses
- ▲ Paper for printing reports
- ▲ Printer cartridges

Human Resources

- ▲ 6 trained data entry personnel (20 hours of training with 4 hours per day average workload)
- ▲ Technical support for hardware problems when needed
- ▲ Identified person capable of creating new data reports on request
- ▲ Person to facilitate user group (20 hours of training with 10 hours per month workload)
- ▲ System administrator/auditor (40 hours of training with 20 hours per month workload)
- ▲ Training of physicians and nurses at each site on how to complete an encounter form

Logistics

- ▲ Organized process for getting completed forms to data entry
- ▲ Organized process for handling data transfer disks 1-2 times per week
- ▲ Organized process for getting printed monthly reports to responsible district and facility administrators
- ▲ Organized user group

Encounter Form and List of Procedure Codes

ENCOUNTER FORM																
										Visit Date: _____						
Dist.		PCH		Fldr.		Doctor					Nurse					
Patient ID #										Birthdate: ____-____-____					Sex: <input type="checkbox"/> M <input type="checkbox"/> F	
															Insurance: <input type="checkbox"/> Y <input type="checkbox"/> N	
Patient Name: _____															Married: <input type="checkbox"/> Y <input type="checkbox"/> N	
PRIMARY REASON FOR VISIT:																
1. <input type="checkbox"/> Acute					Prenatal Care:											
2. <input type="checkbox"/> Chronic					9. <input type="checkbox"/> 0 – 13 weeks					Diagnosis 1-st _____ 2-nd _____ 3-rd _____						
3. <input type="checkbox"/> Emergency					10. <input type="checkbox"/> 14 – 28 weeks											
4. <input type="checkbox"/> Follow-up					11. <input type="checkbox"/> < 28 weeks											
5. <input type="checkbox"/> Check-up					12. <input type="checkbox"/> after birth					Procedure _____ _____ _____						
6. <input type="checkbox"/> Other					Well Baby Care:											
					13. <input type="checkbox"/> Well Baby Visit											
Family Planning:					Note: Please include a special/procedure code for the type of feeding for each child less than one year old											
7. <input type="checkbox"/> Contraceptives																
8. <input type="checkbox"/> Advice only																

List of Procedure Codes

Codes used for visit type 6 (Other)

Injection codes

- 100 Intramuscular injection antibiotic
- 101 Intramuscular injection other
- 102 Intravenous injection
- 103 Subcutaneous injection

Wound care procedure codes

- 300 Wound treatment (simple)
- 301 Surgical wound treatment

Codes for maternity units

- 050 Delivery
- 051 Control after delivery

Codes used in special circumstances

- 500 = blood pressure
- 501 = referral only
- 502 = weight only

NOTE: These codes would be used only if it is the only reason for a visit - to explain why the “Other” category was marked. It wouldn't be marked for blood pressure taken during another type of visit or a referral made during another type of visit.

Codes used for family planning – Visit types 7 & 8

- 033 Spermicide
- 034 Diaphragm
- 035 Pills
- 036 Depo-Provera injection

037 IUD

038 Condom

039 Emergency contraceptive

040 Health education

041 Health education with clients in groups

Codes used for prenatal – Visits types 9,10, 11, 12)

001 First prenatal visit

002 Subsequent prenatal visit

Note: Either 001 or 002 must be included for any of these visits

Additional codes used during prenatal visits when appropriate:

003 Pregnancy greater than 38 weeks

010 Ultrasound examination during pregnancy

011 First dose antitetanus vaccine

012 Second dose antitetanus vaccine

Codes for pregnancy pathology:

(These codes are for use only by nurse-midwives, as doctor will use ICD9 international classification of diseases)

015 Preeclampsia/ Eclampsia

016 Anemia during pregnancy

017 Threatened abortion

018 Multiple pregnancy suspected or diagnosed

019 Rhesus Iso immunization in ongoing or previous pregnancy

020 Uterine bleeding during pregnancy

021 Pelvic mass

022 Diastolic pressure more than 90 mm Hg

023 Pregnant woman with insulin dependent diabetes mellitus

024 Pregnant woman with a renal disease

- 025 Pregnant woman with cardiac disease
- 026 Urinary tract infection during pregnancy
- 027 Cervical and vaginal infections during pregnancy
- 028 Sexually transmitted diseases during pregnancy
- 029 Using of abusive substances, including alcohol
- 030 Other pregnancy pathology

Codes for gynecological diseases

(These codes are used by nurses, midwives in woman wellness centers when they visit a woman who suffers from a gynecological illness) –Visit Type 6 – other:

Upper genital tract infections:

- 060 Endometritis
- 061 Parametritis
- 062 Other upper genital tract infection

Lower genital tract infections:

- 063 Vaginitis (includes yeast infection, or mycotic colpitis)
- 064 Cervicitis
- 065 Other lower genital tract infection

Other

- 066 Sexually transmitted infection (not pregnant)
- 067 Infertility (includes sterility)
- 068 Menopause
- 069 GYN tumors

Codes used for well baby care – Visit types 13, 14, 15:

Immunization codes:

- 210 BCG
- 211 Hep.B-1

213 DTP 1
214 Polio 1
215 Hep B-2
216 DTP 2
217 Polio 2
218 DTP 3
219 Polio 3
220 Hep B-3
221 Fru/Rub –1
222 DTP R-1
223 Polio R-1
224 Fru/Rub –2
225 R- DT
226 R- Td
227 Polio R-2

Additional codes for children consultancy

Type of feeding (use for babies up to one year of age):

240 Only breastfeeding
241 Mainly breastfeeding (includes some water, juice)
242 Breast milk + formula
243 Breast milk + cow's milk
244 Formula only
245 Cow's milk

Reason for referral:

246 Anemia
247 Rickets
248 Underweight

249 Developmental problems

Other:

250 Control prior to immunization

251 Control after immunization

252 Control for sick children

Procedures for Completing the Encounter Form

1. One encounter form should be completed for each patient entered in a health center registry. There are times when a patient is entered in several registries, for example, the pathology registry and the injection registry. Two encounter forms should be completed – to match the information in the registry.
2. Enter the code for the district
 - a) 02 for Berat
 - b) 17 for Kuçova
3. Enter the code for the health center:
 - a) 01 for Lapardha
 - b) 02 for Muzakaj
 - c) 03 for Donika Kastrioti (Kushtrim)
 - d) 04 for 28 Nentori (22 Tetori)
 - e) 05 for 10 Korriku (30 Vjetori)
 - f) 06 for Jani Vruho
 - g) 07 for Clirim
 - h) 08 for Uznove
 - i) 09 for Women's Consulting Room in the Polyclinic
 - j) 10 Women's Consulting Room near Muzakaj
 - k) 01 Havaleas
 - l) 02 Llukan Prifti
 - m) 03 Tafil Skendo
 - n) 04 11 Janari
 - o) 05 Women's Consulting Room in Kucova
4. There is a folder for storing encounter forms near each registry. Please make sure the forms are in the right folder, which matches the registry. There is a number on the folder. Enter this number on the encounter form.
5. For a physician visit, enter the personal codes for the doctor and the assisting nurse.
6. For a nurse visit, enter only the code for the nurse.
7. Enter the date of the visit. Be sure to include a zero for days 01-09 and months 01-09. Use just the last 2 digits for the year.
8. Enter the patient code: **Note:** this code is the **same code used by HII**. All patients will have an

HII code in the future. If the patient does **not** have an HII number, which may be the case in a village, leave the code blank.

9. If the patient has an insurance number but did not bring his/her booklet, please try to find the number in the list of names and numbers in the center. Also, please instruct the patient to always bring his/her booklet when he/she comes for a visit. If after trying everything possible and it is not possible to determine the patient's number, leave the code blank.
10. Write the patient's name.
11. Enter the birthdate of the patient with two digits for the day, two digits for the month, and two digits for the year. Be sure to include a zero for days 01-09 and months 01-09. NOTE: If a patient is 100 years old or greater, write in four digits for the year of birth.
12. Check a box for the sex of the patient.
13. Check a box to indicator whether or not the patient has insurance.
14. Check a box for the marital status.
15. Check a box to indicate whether the visit was done at the patient's home.
16. Check a box to indicate whether or not a referral was made.
17. Check only one of the 15 reasons for visit – the primary reason.
 - a) Physicians generally use the first five reasons for visit. A diagnosis code must be added when these visits are checked. If the physician does not know the diagnosis, then the code "000" should be put in the diagnosis code section.
 - i. **Acute** (1) means the first visit for an acute illness.
 - ii. **Chronic** (2) means a routine visit for a chronic condition such as diabetes or hypertension.
 - iii. **Emergency** (3) means a visit where something happened suddenly requiring immediate intervention, such as stabilization for transfer after an accident. Note: this applies more to rural sites than urban, since emergency cases normally go to the hospital in the cities.
 - iv. **Follow-up** (4) means a visit needed to follow-up after an acute or emergency visit, or after a chronic visit if a problem was identified that needed follow-up
 - v. For example, if a child has tonsillitis and needs to come for a check-up after 24 hours, this is a "follow-up visit."
 - vi. **Check-up** (5) means a preventive care visit. This includes a routine history and physical, screening for diseases, advice about lifestyle.
 - b) Nurses generally use the "**other**" category when a patient comes only for a procedure (injection, wound care, etc.) and does not see the physician for one of the other visit types. Mark the visit type "**other**" (6) and always enter a procedure code. Note: Procedure codes are attached in the annex to this section.
 - c) Nurses usually do the visits for family planning, prenatal care, and well baby care, although these might be done by a physician as well.
 - i. **Contraception / Advice** (7) means a visit where reproductive health information and counseling are given and where contraceptive methods are given to the patient. See annex for procedure code to use for each type of contraceptive.

- ii. **Advice Only** (8) means a visit for family planning where only reproductive health information and counseling are given.
 - iii. **For prenatal care**, (9, 10, 11, 12), mark the number of weeks pregnant or mark that it is a visit made after delivery. Enter procedure code 1 if this is the first visit during the pregnancy. Enter procedure code 2 if this is a subsequent visit. If there are any pathologies present, enter the pathology as a procedure/special code. If a referral is made to the specialist, check “yes” under referral, and in addition, add a special code (reason for referral) in the procedure code section.
 - iv. **The category for “well baby care”** (visit type 13) is intended for use by nurses doing routine well baby care. In addition to marking the visit type, add a special code in the procedure section to indicate the type of feeding for babies up to one year of age. In addition, if the nurse refers the child to the doctor, a code should be added to indicate the reason.
18. Note: A diagnosis code should always be included for visit types 1-5. The diagnosis codes should match those used for HII prescriptions. Use code 000 if the diagnosis is pending or if the patient is healthy.
19. Procedure or special codes will be changed frequently. Please make sure you have the most recent list.
20. Once complete, put the encounter form in the folder designated for the specific registry.
21. NOTE: If there is a problem with a form, such as missing information or illegible writing, the form will be rejected and must be corrected. Rejected forms will be returned to each health center. The center chief (or designee) is responsible for distributing the incorrect forms to the appropriate physician or nurse. The physician or nurse should correct the form and put the corrected form in his/her encounter form folder with their other completed forms

Procedure for Data Entry

1. Needed to set up the data entry
 - a) Computer & program
 - i. Each computer has a designated set of health centers
 - b) Three sets of labeled folders for each registry or nurse's notebook
 - c) Consecutive number stamp
 - i. NOTE: This is not required. A number can be hand-written on the forms.
 - d) Batch slips
 - e) Batch clips
 - f) Rubber bands
 - g) Boxes or containers for each computer.
 - i. "To be numbered" box
 - ii. "To be batched" box
 - iii. "Ready for pass 1"
 - iv. "Ready for pass 2"
 - v. "Finished"
 - h) Folder for rejects for each center
2. Folders – Three sets of clearly labeled folders (Health Center, #, description – usually doctor or nurse name)
 - a) Set includes one for each registry or notebook filled out by the doctor or nurse
 - i. Folders are exchanged when encounter forms are picked up or delivered to the HIS office
 1. Currently Afrim exchanges folders on Tuesday and Friday, in addition to making sure the center has blank forms. Any time he is not available to do this, the supervisor needs to make other arrangements. (In the future each center will have a specific procedure for getting blank forms and delivering completed forms.)
 - ii. In the health center, the folder is kept near the registry to which it corresponds
 - b) Set used during numbering and batching
 - c) Extra set used for exchanging encounter forms that need to be picked up or any time a center brings their folders to the HIS office
3. Boxes / containers in the HIS office – a set for each computer
 - a) Box for folders recently picked up and needing to be numbered
 - b) Box for folders with numbered forms that need to be batched
 - c) Box for batches ready for the first pass
 - d) Box for batches ready for the second pass
 - e) Box for finished batches for current month – clip removed, stapled or rubber banded together in case they need to be used for some reason

- f) Box for finished batched for the previous month (Note: at the start of a new month, you throw again the oldest month)
- 4. Numbering of encounter forms
 - a) Form is numbered in the upper left-hand corner of each form
 - b) Consecutive numbers should be used up to 30,000. After 30,000, start again with # 1.
- 5. Batching
 - a) Forms are sorted into batches according to facility, folder/registry, doctor, nurse, visit date
 - b) Batches are clipped together with a batch slip
 - c) In computer program, go to create batches
 - i. Select appropriate facility, folder/registry, doctor, nurse
 - ii. Enter visit date (if the same for the whole batch)
 - iii. This results in a computer generated batch number
 - iv. Note: batches with the same characteristics need to have additional information added in the notes field to make the batch description unique. The program alerts you when this is needed.
 - d) Write batch number of the batch slip
 - e) Put batch in “ready for pass 1” box
- 6. Pass 1, including reject process
 - a) Computer used for data entry should have the sound enabled
 - b) Select the batches with the
 - c) Data entry person selects his/her name from the list of users
 - d) Each field in the first form of the batch must be entered
 - e) On subsequent forms the fields identified in the batching process do not need to be entered
 - f) Data is entered using only the number keypad, with data entry person looking only at the encounter form.
 - g) There should no need to look at the screen or the keypad, unless computer beeps indicate an error or problem
 - h) If the program detects a problem, an error message appears on the upper right-hand corner of the screen
 - i) If the problem is inaccurate data entry, click ok and you are returned to the field to re-enter the data
 - j) If the problem is not a data entry error, click reject form (see computer generated list for reasons)
 - i. ***It is very important to reject forms that are not complete or that have illegible handwriting. Do NOT add information or guess.***
 - ii. A form can be rejected at any time in the process by clicking the “reject form” button at the lower left. For example, this would be used when field is not completed. A reason for rejection is entered into the computer

- iii. Data entry person circles problem area
 - iv. Data entry person puts the rejected form in the designated reject folder for the center
 - v. Continue entering forms
 - k) When all forms in the batch have been entered, click “end batch” button to save the batch data in the computer
 - l) Clip forms back together and check the “pass 1” box on the batch slip
 - m) Put in the “Ready for pass 2” box
 - n) If you need to cancel a batch at any time, press the escape key to take you to the form ID field; then press “cancel batch” key. Canceling a batch will erase all forms entered for the batch. The batch still exists in the computer and the batch can be re-entered later.
 - o) A common problem can occur if a form ID # is entered incorrectly. This might result in a subsequent form (that actually has the ID # entered incorrectly on a previous form) being rejected because the form ID# already exists. If this type of problem occurs, assign a number that is different from other forms in the same batch.
 - p) Special keys
 - i. Minus key (-) erases information in current field and backs up one field
 - ii. Escape key (esc) will erase all the information entered to that point for that form and take you back to the form ID field
7. Pass 2
- a) Data entry identifies him/herself
 - b) Enter the data as in pass 1. The procedure is the same unless the computer detect a difference
 - c) If the data entered in pass 2 is different from the data entered in pass 1, the computer will ask you to select the correct entry. If neither is correct, enter the correct information in the pass 2 field
 - d) The batch will be automatically completed when the last form is entered
 - e) Common problem
 - i. If a correctly entered form ID # produces the message “form cannot be found in this batch,” set this form aside until the end of the batch. At the end of the batch, press the enter key at the form ID field. The error message will display the ID # of the missing record. This situation occurs when the form ID# was incorrectly entered in pass 1. Change the ID# on the form to the one in the system (that was entered during the pass 1) and use this number to enter the form.
8. Rejects
- a) Reject folder is returned to each center at the time of routine collection of encounter forms.
 - b) Center chief (or designee) is responsible for making sure each physician or nurse gets his/her rejected forms.
 - c) Nurse or physician corrects forms and places in folder with other completed forms
9. Always batch and process forms from the previous months before batching forms for the current month, so that reports can be generated in a timely manner.

10. Finished batches that are more than two months old should be destroyed in a manner that protects patient confidentiality. Respecting patient confidentiality means assuring that there is no chance that an unauthorized person could learn information about a specific patient from the discarded forms.

End of Month Procedure – Facility Level

1. After the end of a month all data entry efforts should be focused on entering forms with visit dates from last month. It is important to finish entering all of the forms from last month by the fifth working day of the next month.
2. All of the forms may be entered for some facilities before other facilities. Do not delay taking the next End of Month steps for a facility that is finished while you wait for all forms to be entered for another facility. By the fifth working day of the month you should take these next steps for all facilities that are finished.
3. Print the Last Month Batches Report. Go to Menu: Reports→Last Month Batches
 - a) Last Month Batches Waiting for Pass 1 – This is a list of batches that were created last month (or before) or are defined for a visit date that is last month (or before). If you can not find these batches then you can delete them by going to Menu: Manager→Change Batch Settings. Select the lost batch and click “Delete”.
 - b) Last Month Batches Waiting for Pass 2 – This is a list of batches that have been entered for Pass 1 but have not yet been entered for Pass 2. If you can not find a batch on this list you can accept the data entered in Pass 1 as final by going to Menu: Manager→Lost Batches. Click on “Finish Pass 1 Batches”. This will open the form where you can “Add Batch Records to the Main Database” if the batch has been lost after Pass 1. Highlight the lost batches and click “Add” to do this.
4. Transfer data to your machine from any other machine that might have entered forms for your facilities.
5. Make all data transfers to other machines as necessary.
6. For each facility, print their Monthly Report and distribute to the responsible Administrator. If your computer does not have access to a printer, then the Monthly Report for your facilities will need to be printed by your Mother computer. To print the monthly report, go to Menu: Manager→System Administration. This will open the System Administration program. Here go to Menu: Reports→Monthly Reports. Click on the Report Level = Facility button. Select the Facility for which you wish to print reports from the dropdown list. Select the Month to be the last month from the dropdown list. Click “Print”. There are two pages to the Facility report. Print both pages and then see that these reports are delivered to the responsible Administrator of that facility as listed at the bottom of the reports.
7. For each facility, print the Registry Audit Worksheets. From the System Administration program go to Menu: System→Registry Audit Worksheet. Select the Facility and the Month and click “Create Audit Record”. If your computer does not have access to a printer, then you will need to save this report as a Word document and then transfer the report to a computer with a printer. Once printed the Registry Audit Worksheets need to be delivered to each facility for completion.
8. Forms entered at one computer should be kept separate from the Forms entered at another computer. At each computer you should keep finished batches/forms for last month separate from the batches/forms for this month. After forms are two months old they should be destroyed.

End of Month Procedure – District Level

1. Once all forms are entered for all facilities in the District, which should be by the fifth working day of the next month and all data transfers are made to update the District computer with the data from all facility level machines, the Monthly Report for the District needs to be printed.
2. To print the monthly report, go to Menu: Manager→System Administration. This will open the System Administration program. Here go to Menu: Reports→Monthly Reports. Click on the Report Level = District button. Select the District for which you wish to print reports from the dropdown list. Select the Month to be last month from the dropdown list. Click “Print”. There will be five sections to the District report. Print all sections and then see that these reports are delivered to the responsible Administrator of that facility as listed at the bottom of the reports.

Sample Reports

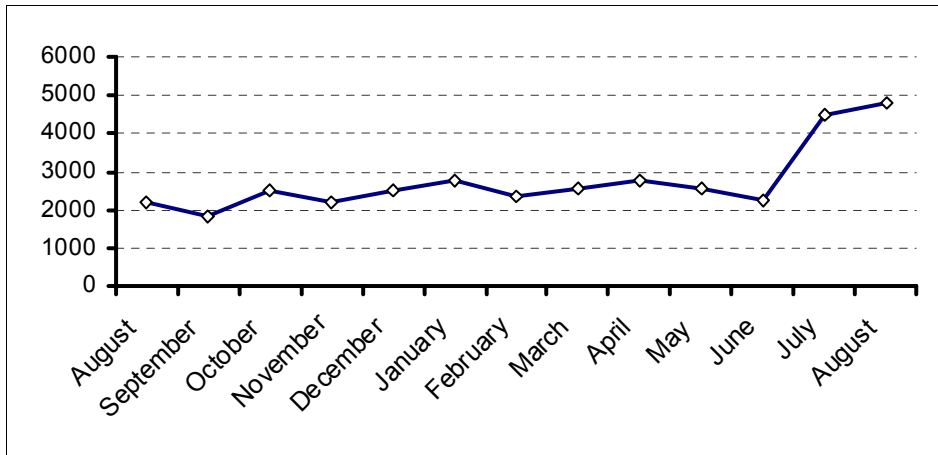
- MONTHLY REPORTS -

- PRODUCTIVITY -

District : Kucova

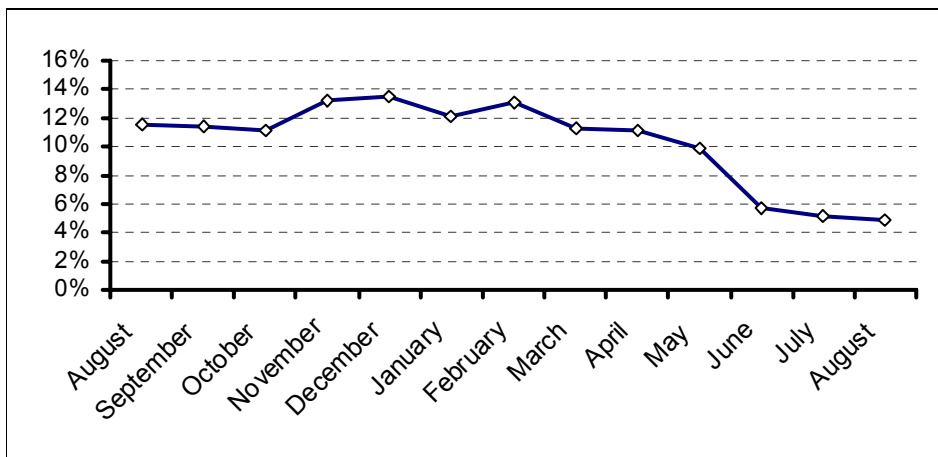
August 2004

Monthly Visits for the Last 13 Months



August 2003	2179
September 2003	1850
October 2003	2505
November 2003	2169
December 2003	2490
January 2004	2755
February 2004	2355
March 2004	2543
April 2004	2769
May 2004	2540
June 2004	2250
July 2004	4471
August 2004	4802

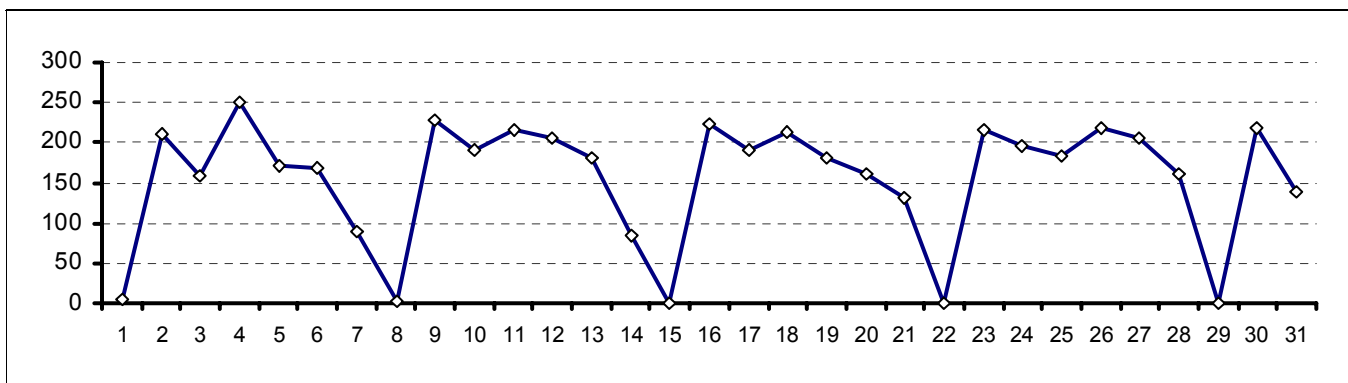
Referral % for the Last 13 Months



Physician Visits and Referrals

August 2003	1225	141
September 2003	1065	122
October 2003	1551	172
November 2003	1365	180
December 2003	1639	221
January 2004	1737	210
February 2004	1581	206
March 2004	1779	201
April 2004	1864	208
May 2004	1731	172
June 2004	1527	87
July 2004	2767	144
August 2004	3056	149

Daily Visits during : August 2004



Total Visits By Month By Physician

	August 2003	September 2003	October 2003	November 2003	December 2003	January 2004	February 2004	March 2004	April 2004	May 2004	June 2004	July 2004	August 2004	Last 12 Months
10 Korriku														
Evelina Bojax											184	151	183	518
Lorenc Basko											290	267		557
Valbona Zenel											306	300	771	1,377
28 Nentori														
Eleni Dollani											324	313	307	944
Iliriana Gjika											139	87	47	273
Rexhina Gega											89	82	8	179
Riza Hatellari											337	319	314	970
Clirim														
Ardian Muhaj											323	315	386	1,024
Ermira Prifti											291	250	141	682
Telemak Xheb											244	216	278	738
Donika Kastrioti														
Fatbardha Ca											226	214	65	505
Festim Nasufi											252	253	315	820
Valentina Leci											191	202	142	535
Jani Vruho														
Albana Picina											234	190	185	609
Marie Shehu											29	69	143	241
Lapardha														
Ajet Veleshnja	114	42	169	131	182	248	226	214	90	94	69	79	109	1,653
Ilir Mance									32	24	6		13	75
Nimete Veislla									14	23	5	5		47
Muzakaj														
Adelina Ndini	92	116	125	136	168	187	182	166	225	139	131	158	161	1,894
Donika Papa	192	142	179	125	251	193	180	180	209	210	154	126	155	2,104

Region:Berat District:Berat

Distribute To: Neritan Kurteshi

26/09/2004

Total Visits By Month By Physician

	August 2003	September 2003	October 2003	November 2003	December 2003	January 2004	February 2004	March 2004	April 2004	May 2004	June 2004	July 2004	August 2004	Last 12 Months
Hortensia Kok	257		185	315	298	323	367	286	292	386	297	272	391	3,412
Margarita Xhe	278	3	326	364	401	389	376	422	408	462	424	417	156	4,148
Shpetim Ziu	119	525	224	217	286	287	301	245	332	287	267	174	231	3,376
Uznove														
Ibrahim Aliaj											247	278	154	679
Ledina Hatia											136	80	225	441

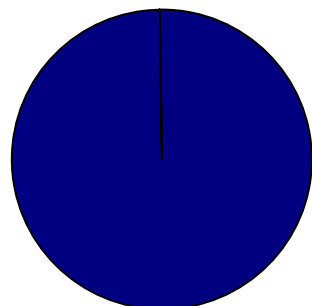
- PERIODIC REPORTS -

- VISIT DATA -

Physician : Natasha Kryethi

June 2004 - August 2004

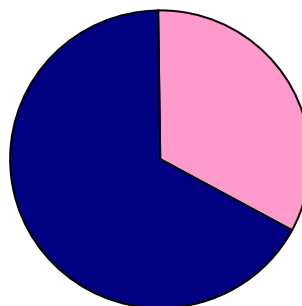
Visits By Home Visits



1 Home Visits

2 Facility Visits

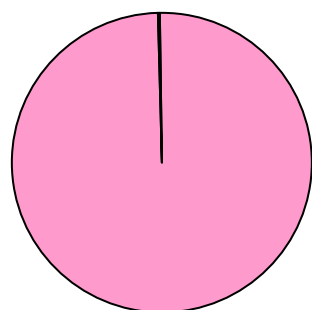
Visits By Sex



1 Males

2 Females

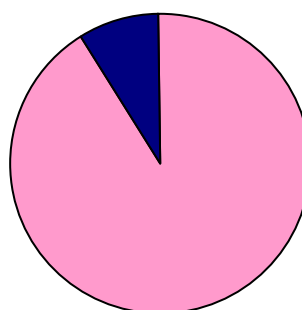
Visits By Insured



1 Insured

2 Non-Insured

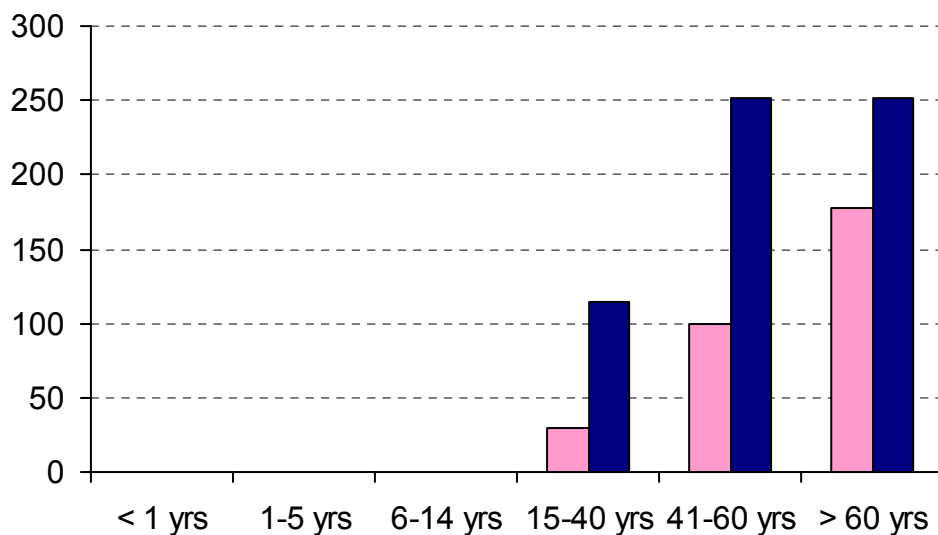
Visits Of Insured Patients By Patient ID



1 With PatientID

2 Without PatientID

Visits by GroupAges / Sex



GroupAge/ Males/ Females

< 1 yrs		
1-5 yrs		
6-14 yrs		
15-40 yrs	30	115
41-60 yrs	99	252
> 60 yrs	177	252

Males

Females

Total Visits By Month

	August 2003	September 2003	October 2003	November 2003	December 2003	January 2004	February 2004	March 2004	April 2004	May 2004	June 2004	July 2004	August 2004	Last 12 Months
Lapardha	570	441	828	805	665	873	661	669	582	555	407	527	491	7,504
Muzakaj	1377	1605	1929	2087	2112	2387	2512	2549	2476	2826	2377	1890	1931	26,681
Donika Kastrio											1679	1394	1148	4,221
28 Nentori											1903	1635	1463	5,001
10 Korriku											1425	1196	1347	3,968
Jani Vruho											570	536	480	1,586
Clirim											2700	2274	2405	7,379
Uznove											1035	1292	1054	3,381
Konsultori i gr											308	296	260	864
Konsultori i gr											131	70	64	265
Planifikime fa											126	141	148	415

Total Visits By Month By Nurse

	August 2003	September 2003	October 2003	November 2003	December 2003	January 2004	February 2004	March 2004	April 2004	May 2004	June 2004	July 2004	August 2004	Last 12 Months
10 Korriku														
Adelina Mehilli											25	13		38
Aferdita Dhimit											46	14	77	137
Alketa Papa											88	55	26	169
Barie Shehu											297	259	122	678
Flutura Frashe											14	1		15
Lumturi Lleshi											1	1		2
Miranda Xhimi											14			14
Xhezmie Zoca											9			9
Xhuljeta Kollc											151	135	168	454
28 Nentori														
Antonela Caka											176	208	272	656
Kozeta Ziu											210	144	274	628
Merita Drizdari											157	158	21	336
Natasha Lapar											198	58	66	322
Violeta Zogani											38	73	67	178
Vjollca Brisku											235	193	87	515
Clirim														
Elmazi Vraha											150	78	43	271
Fatime Ziraj											189	143	190	522
Feride Tetova											261	246	69	576
Hajrie Ozumi											180	316	304	800
Nexhmie Agall											207	182	105	494
Rronja File											122	119	27	268
Suzana Ermez											330	127	278	735
Zulfie Qorri											204	200	275	679
Zymbyle Zam											199	82	309	590
Donika Kastrioti														
Adelina Lybes											239	23	263	525
Arta Nurellari											209	197		406

Region:Berat District:Berat

Distribute To: Neritan Kurteshi

26/09/2004

Total Visits By Month By Nurse

	August 2003	September 2003	October 2003	November 2003	December 2003	January 2004	February 2004	March 2004	April 2004	May 2004	June 2004	July 2004	August 2004	Last 12 Months
Drita Irdesha											259	151	248	658
Minushe Xhaf											21	28	34	83
Pashako Qato											16		11	27
Tefta Paja											15	41		56
Vilma Ziu											251	285	70	606
Jani Vruho														
Karafite Bega											21	20	29	70
Keze Cela											164	160	13	337
Vasilika Naku											122	97	110	329
Konsultori i gruas Clirim														
Donika Buda											131	70	64	265
Konsultori i gruas ne Poliklinike														
Aferdita Abedi											95	91	104	290
Tefta Shakaj											107	99	102	308
Zana Aliaj											106	106	54	266
Lapardha														
Aferdita Jaho	25	29	71	49										149
Eva Shkemi	51	4	72	154	47	104	11	59	93	31	15	49	44	683
Merjeme Dalle	115	127	161	145	89	211	154	186	199	194	144	262	165	2,037
Nadire Sala	21	76	75	68	98	122	117	60	58	42	49	70	78	913
Nazime Shke	50	16	91	97	97	45	1	74	45	101	36	14	42	659
Nexhmije Jau	5	2	10	15	26	17	14	15	12	2	7	5		125
Pranvera Kola	39	37	35	58	19	33	24	15	20					241
Sanie Boni	70	64	118	88	107	93	114	46	17	44	76	43	40	850
Muzakaj														
Adelina Mollaj	1	194	156	125	147	162	141	151	137	164	107	180	40	1,704
Advije Xhija	135	113	110	71	139	185	148	158	208	161	148	28	111	1,580
Anastasi Qend	69	62	110	141	48	123	178	192	157	97	76	69	53	1,306

Total Visits By Month By Nurse

	August 2003	September 2003	October 2003	November 2003	December 2003	January 2004	February 2004	March 2004	April 2004	May 2004	June 2004	July 2004	August 2004	Last 12 Months
Asije Stavri	27	58	61	265	9	113	101	234	188	371	241		89	1,730
Edije			1					1	1	51	62	87	77	280
Fatime Bega			1								2			3
Lumturi Gorezi	75	24	27	1										52
Lumturi Kajo	2	142	150	114	146	157	209	153		172	139	152	158	1,692
Mimoza Bojax			1		1							9	12	23
Myzafere Dem						1	2	1	1					5
Nexhmije Zela	88	117	120	101	81	115	154	200	171	184	178	51	217	1,689
Sadete Meleqi	1							2						2
Sadije Lahe	39	108	153	110	137	150	172	157	145	142	151	167	80	1,672
Violeta Debinj						2								2

Planifikime familjar - Konsultori i gruas

Dashuri Beqiri											126	141	148	415
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Uznove

Alketa Ibrahim											192	190	218	600
Erisela Keli											22			22
Meleqe Sham											165	189	62	416
Natasha Gora											100	79	67	246
Sanije Kondi											74	90		164
Valbona Solla											99	220	325	644

- PERIODIC REPORTS -
- FREQUENCY OF DIAGNOSES -

Physician : **Natasha Kryethi**

June 2004 - August 2004

CLASS	CODE	DIAGNOSE	VISITS	CASES
VII	401	Essential hypertension	365	207
III	250	Diabetes mellitus	94	53
XIII	721	Spondylosis and allied disorders	75	68
IX	532	Duodenal ulcer	48	34
VIII	466	Acute bronchitis and bronchiolitis	44	42
IX	555	Regional enteritis	36	32
V	300	Anxiety, dissociative and somatoform disorders	27	23
VIII	464	Acute laryngitis and tracheitis	22	21
VIII	463	Acute tonsillitis	22	21
X	616	Inflammatory disease of cervix, vagina, and vulva	20	16
X	595	Cystitis	19	19
IV	280	Iron deficiency anemias	13	13
VII	402	Hypertensive heart disease	11	6
III	278	Obesity and other hyperalimentation	11	7
X	590	Infections of kidney	11	11
VIII	490	Bronchitis, not specified as acute or chronic	11	10
XII	692	Contact dermatitis and other eczema	10	10
XIII	724	Other and unspecified disorders of back	9	8
I	127	Other intestinal helminthiasis	8	8
VIII	493	Asthma	8	7
XIII	717	Internal derangement of knee	8	7
V	311	Depressive disorder, not elsewhere classified	7	7
VI	345	Epilepsy	6	4
III	241	Nontoxic nodular goiter	6	4
VIII	485	Bronchopneumonia, organism unspecified	6	6
VII	413	Angina pectoris	5	5
VI	332	Parkinson's disease	5	3
V	295	Schizophrenic disorders	5	3
X	600	Hyperplasia of prostate	5	4
VII	454	Varicose veins of lower extremities	4	2
VI	372	Disorders of conjunctiva	4	4
VI	365	Glaucoma	4	3

Region : Berat, District : Kucova, Facility : Llukan Prifti

26/09/2004

- PERIODIC REPORTS -
- FREQUENCY OF DIAGNOSES -

Physician : **Natasha Kryethi**

June 2004 - August 2004

CLASS	CODE	DIAGNOSE	VISITS	CASES
XIII	710	Diffuse diseases of connective tissue	4	2
II	174	Malignant neoplasm of female breast	4	3
I	112	Candidiasis	4	4
IX	525	Other diseases and conditions of the teeth and su	4	4
VII	412	Old myocardial infarction	3	2
X	592	Calculus of kidney and ureter	3	3
III	242	Thyrotoxicosis with or without goiter	3	2
II	223	Benign neoplasm of kidney and other urinary orga	3	1
XIII	714	Rheumatoid arthritis and other inflammatory polyar	3	2
XII	708	Urticaria	2	2
XIII	718	Other derangement of joint	2	2
VII	405	Secondary hypertension	2	2
VIII	477	Allergic rhinitis	2	2
VI	381	Nonsuppurative otitis media and Eustachian tube	2	2
IV	282	Hereditary hemolytic anemias	2	1
XII	680	Carbuncle and furuncle	2	1
IX	558	Other and unspecified noninfectious gastroenteriti	2	2
XVII	945	Burn of lower limb(s)	1	1
XI	632	Missed abortion	1	1
V	312	Disturbance of conduct, not elsewhere classified	1	1
XI	675	Infections of the breast and nipple associated with	1	1
XVII	956	Injury to peripheral nerve(s) of pelvic girdle and lo	1	1
XI	639	Complications following abortion and ectopic and	1	1
V	296	Episodic mood disorders	1	1
XVII	811	Fracture of scapula	1	1
VI	380	Disorders of external ear	1	1
II	195	Malignant neoplasm of other and ill-defined sites	1	1
II	200	Lymphosarcoma and reticulosarcoma	1	1
I	2	Typhoid and paratyphoid fevers	1	1
I	53	Herpes zoster	1	1
III	271	Disorders of carbohydrate transport and metabolis	1	1
XII	691	Atopic dermatitis and related conditions	1	1

Region : Berat, District : Kucova, Facility : Llukan Prifti

26/09/2004

- PERIODIC REPORTS -
- FREQUENCY OF DIAGNOSES -

Physician : Natasha Kryethi

June 2004 - August 2004

CLASS	CODE	DIAGNOSE	VISITS	CASES
VIII	515	Postinflammatory pulmonary fibrosis	1	1
VIII	462	Acute pharyngitis	1	1
VIII	473	Chronic sinusitis	1	1
XVII	872	Open wound of ear	1	1
XIII	719	Other and unspecified disorders of joint	1	1
VII	415	Acute pulmonary heart disease	1	1
XII	686	Other local infections of skin and subcutaneous tis	1	1
XII	690	Erythematousquamous dermatosis	1	1
X	626	Disorders of menstruation and other abnormal ble	1	1
XVII	911	Superficial injury of trunk	1	1
VI	346	Migraine	1	1
X	598	Urethral stricture	1	1
VI	385	Other disorders of middle ear and mastoid	1	1
VI	382	Suppurative and unspecified otitis media	1	1
VII	390	Rheumatic fever without mention of heart involvem	1	1
X	593	Other disorders of kidney and ureter	1	1
V	302	Sexual and gender identity disorders	1	1
XII	681	Cellulitis and abscess of finger and toe	1	1

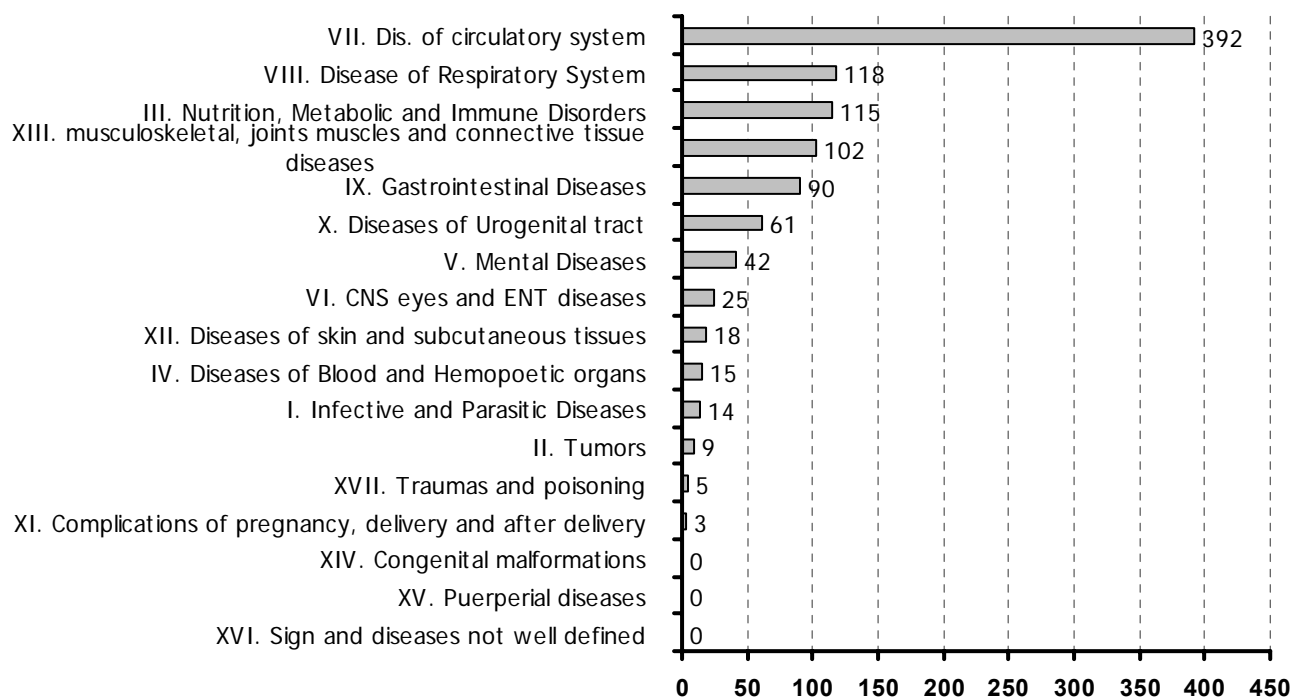
- PERIODIC REPORTS -

- FREQUENCY OF DIAGNOSES BY CLASS -

Physician : **Natasha Kryethi**

June 2004 - August 2004

Frequency of Diagnoses by Class - Visits -



Frequency of Diagnoses by Class - Cases -

